

PIMA COMMUNITY COLLEGE  
2017-2018 | CATALOG



# PimaCommunityCollegeCatalog 2017-2018

## Pima County Community College District

4905 East Broadway Blvd.  
Tucson, AZ 85709-1010  
(520) 206-4500

Pima Community College is an equal opportunity, affirmative action employer and educational institution committed to excellence through diversity. **See page 587 for more information.**

Reasonable accommodations, including materials in an alternative format, will be made for individuals with disabilities, including students with intellectual disabilities, as soon as can be reasonably expected upon receiving proper notification. For the public, please contact the PCC information line at 520-206-4500 (TTY 206-4530); for PCC students, contact the appropriate campus Access and Disability Resources office. Additional information on services and facilities that support individuals with disabilities is available in the Student Services and Student Life section of this document.

The PCC Department of Public Safety provides an Annual Crime Statistics and Clery Crime Act Report of information and statistics for the previous three years concerning reported crimes that occurred on campus and in certain off-campus buildings or property owned or controlled by the Pima County Community College District; and on property within, or immediately adjacent to and accessible from, the campus. The report also includes institutional policies concerning campus security, such as policies concerning sexual assault, and other matters. You can obtain a copy of this report by contacting 520-206-2671. The report can be found online at [www.pima.edu/dps/reports](http://www.pima.edu/dps/reports).

The Pima Community College Catalog and online class schedules can be found at [www.pima.edu](http://www.pima.edu).

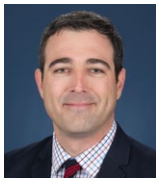
All information—including statements on admission, tuition, fees, course offerings and graduation requirements—is subject to change without notice, obligation or liability.

Published: July 2017

### Pima County Community College District Governing Board



District 1  
Mark Hanna,  
*Chair*



District 2  
Demion Clinco  
*Vice Chair/Secretary*



District 3  
Sylvia Lee, Ph.D.



District 4  
Meredith Hay, Ph.D.



District 5  
Luis Gonzales



PimaCommunityCollege

**(520) 206-4500**  
[www.pima.edu](http://www.pima.edu)





## Message from the Chancellor

Welcome to Pima Community College. PCC is dedicated to giving our constituents the best opportunity to achieve their personal goals through the promise inherent in education.

PCC is an open-admissions institution that welcomes everyone who can benefit from our programs and services. We are committed to imparting knowledge that furthers academic achievement, economic development and cultural connection.

Our 2017-2018 Catalog contains a wealth of information on the wide variety of learning opportunities offered at PCC. Our credit programs award certificates and associate degrees in dozens of fields. PCC also provides workforce development, career training, continuing education and adult education.

Whether you choose to attend PCC to transfer to a bachelor's-degree granting college or university, to improve your job skills or to pursue an entirely new career, we can help you achieve your objective.

Pima Community College will be here as a lifelong partner to help you grow academically and professionally.

Lee D. Lambert, J.D.  
Chancellor

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# Academic Calendar

## Fall Semester 2017

Faculty advising begins	Aug. 16
All College Day (College closed)	Aug. 18
<b>Fall classes begin</b> (for 16-week classes)	Aug. 23
‡ First 8-week session begins	Aug. 23
Registration deadline: <i>Students can register until the day before the first meeting of a course for any session.</i>	
Labor Day holiday (College closed)	Sept. 4
Drop/Refund/Audit deadline (for 16-week classes)	Sept. 5
Graduation Application deadline	Oct. 13
First 8-week session ends	Oct. 17
‡ Second 8-week session begins	Oct. 18
Student Withdrawal deadline (for 16-week classes)	Nov. 8
Veterans Day holiday (College closed)	Nov. 10
Thanksgiving holiday (College closed)	Nov. 23-24
<b>Fall classes end</b> (for 16-week classes)	Dec. 17
Second 8-week session ends	Dec. 17
Holiday break (College offices closed)	Dec. 23–Jan. 2
<i>(College closed at noon on Dec. 23)</i>	

## Spring Semester 2018

College offices open	Jan. 3
Faculty advising begins	Jan. 9
All Faculty Day	Jan. 10
Martin Luther King Jr. holiday (College closed)	Jan. 15
Registration deadline: <i>Students can register until the day before the first meeting of a course for any session.</i>	
<b>Spring classes begin</b> (for 16-week classes)	Jan. 16
‡ First 8-week session begins	Jan. 16
Drop/Refund/Audit deadline (for 16-week classes)	Jan. 29
Graduation Application deadline	Feb. 21
** Rodeo holiday (College closed)	Feb. 22-23
First 8-week session ends	March 11
Spring break (no classes)	March 12-18
‡ Second 8-week session begins	March 19
Student Withdrawal deadline (for 16-week classes)	April 5
Second 8-week session ends	May 13
<b>Spring classes end</b> (for 16-week classes)	May 15
Graduation	May 17

## Summer Sessions 2018

Memorial Day holiday (College closed)	May 28
Graduation Application Deadline	June 29
Independence Day (College closed)	July 4

### Session A

Registration deadline	May 28
Classes begin	May 29
Drop/Refund/Audit deadline	June 1
Student Withdrawal deadline	June 20
Classes end	July 2

### Session B

Registration deadline	July 4
Classes begin	July 5
Drop/Refund/Audit deadline	July 10
Student Withdrawal deadline	July 26
Classes end	Aug. 8

### Session C (8-week session)

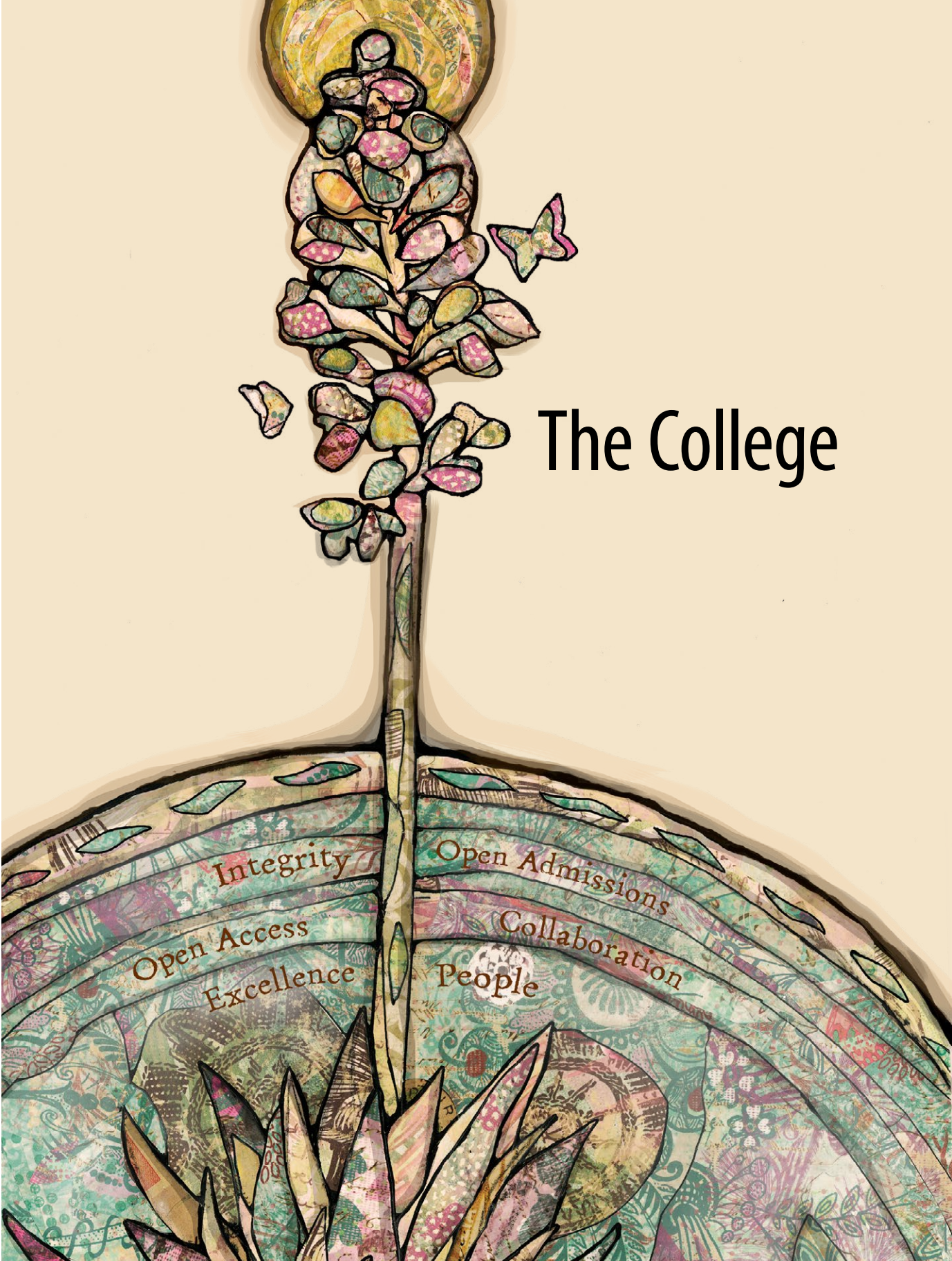
Registration deadline	May 28
Classes begin	May 29
Drop/Refund/Audit deadline	June 4
Student Withdrawal deadline	July 5
Classes end	July 24

### Session C (10-week session)

Registration deadline	May 28
Classes begin	May 29
Drop/Refund/Audit deadline	June 6
Student Withdrawal deadline	July 16
Classes end	Aug. 8

‡ Sessions may begin earlier at Davis-Monthan Air Force Base.

\*\* The College will be open for classes/activities on the Saturday and Sunday following the 2018 Rodeo Holiday.



# The College

## How This Catalog Can Help Students To Succeed

The Pima Community College Catalog is a valuable tool in answering your questions and helping you while you are at Pima Community College. This catalog is organized to guide you through each step of your college career at this institution:

- Admission/Registration
- Tuition and Fees
- Financial Aid
- Certificate and Degree Requirements
- Course Descriptions
- Campus Services
- Faculty Information
- Selected Policies

If you have any questions about the material in this catalog or need help in planning your educational goals, please see a PCC advisor or counselor at any of the campuses or centers.

This catalog is one of four publications essential to a student's success at Pima Community College.

The other three publications are:

- **Class Schedules**—Pima's online class schedules allow students to easily find when and where classes are offered. Credit class schedules are posted one month before the beginning of registration for that semester. Other class schedules are posted annually. The class schedules are available at [www.pima.edu](http://www.pima.edu).
- **Student Success & Registration Guide**—This guide is a semesterly publication that provides details and contact information for our programs, services, costs, financial aid, admissions, registration and more. The guide is available at all campus Student Services Center.
- **Student Handbook**—an annual publication of regulations and resources at PCC. The handbook is distributed to students attending orientation and available at any campus Student Services Center.

## Accreditation

Pima Community College (4905 E. Broadway Boulevard, Tucson, AZ 85709, 520-206-4500) is accredited by the Higher Learning Commission of the North Central Association of Colleges. The Commission can be reached through its website ([www.higherlearningcommission.org](http://www.higherlearningcommission.org)), by telephone (800-621-7440), or by mail at 30 N. LaSalle Street, Suite 2400, Chicago, IL 60602-2504. The following programs also have been accredited or certified by specialized agencies recognized by the Arizona Department of Education and/or the U.S. Department of Education: Automotive Technology, Building and Construction Technology, Dental Assisting, Dental Hygiene, Dental Laboratory Technology, Early Childhood Education, Emergency Medical Technology, Health Information Technology, Machine Tool Technology, Medical Laboratory Technology, Nursing, Paralegal, Pharmacy Technology, Radiologic Technology, Respiratory Therapy, Surgical Technology, Teacher Education, Therapeutic Massage, and Veterinary Technology. In addition, Pima's Aviation Technology Program is approved by the Federal Aviation Administration.

## College Mission

Pima Community College is an open-admissions institution providing affordable, comprehensive educational opportunities that support student success and meet the diverse needs of its students and community.

## College Vision

Pima Community College will be a premier community college committed to providing educational pathways that ensure student success and enhance the academic, economic and cultural vitality of our students and diverse community.

## College Values

To guide Pima Community College, these values characterize the way in which we accomplish our mission:

### People

We value our students, employees and the community members we serve, by making decisions that address the needs of those populations.

### Integrity

We make a commitment to academic honesty, personal ethics and institutional decision-making that is based on sound moral principles, accountability and transparency.

### Excellence

We embrace best practices and value high quality services and programs that lead to successful outcomes for our students through evidence-based continuous improvement practices.

### Communication

We are committed to sharing information with internal and external stakeholders in a transparent, timely and meaningful way that is open, honest and civil.

### Collaboration

We encourage teamwork and cooperation within the College and with the community to support student success.

### Open Admissions and Open Access

We value open admissions and access to our programs and services for all who may benefit from them, regardless of where they are starting from or what their final goal may be.

## Core Themes and Objectives

### Student Success

- Support and increase student goal achievement
- Support student progress toward goals
- Enhance course, program and general education assessment to improve learning

### Access

- Provide educational pathways and resources that meet student and community needs
- Increase enrollment across the College

### Teaching and Program Excellence

- Provide excellent teaching that utilizes best practices to support student success
- Offer relevant and quality programs that provide positive contributions to the economy of the region

### Student Services

- Provide quality and appropriate student support services at the campuses



- Provide student-centered admissions and financial aid processes that support student success

### Community Engagement

- Promote initiatives that provide opportunities for the development of our students and community
- Engage with national, state and local authorities on initiatives that support the mission of the College-Develop and enhance partnerships that identify and respond to the educational needs of the community
- Engage with industry and increase the skilled workforce within Pima County

### Diversity, Inclusion and Global Education

- Expand and support the diversity of the College's student population
- Close the achievement gap
- Expand and support the diversity of the College's workforce
- Develop and increase the student population through global education

### Institutional Effectiveness

- Ensure effective and ethical use of the College's financial resources, technology and infrastructure
- Enhance an evidence-based approach to decision-making that is based on continuous improvement processes

## Institutional Effectiveness Policy

The College is committed to ensuring institutional effectiveness through continuous assessment and quality improvement. Accordingly, the College will establish responsive and integrated planning, evaluation, development and project-support systems to help the College fulfill its mission in the most effective and efficient manner.

The College annually measures its overall mission performance by reporting to the community through the College planning process.

## College Profile

In 1966 the citizens of Pima County, Arizona, voted by a large margin to form a junior college district. The county superintendent of schools appointed a five-member governing board that laid the groundwork for Pima College. With help from committees composed of citizens, the board developed educational goals, created a financial plan, selected a president, and chose a campus site.

The next year the citizens of Pima County elected a board to replace the appointed officials and approved a \$5.9 million bond issue for the College. In 1969, construction on the first campus began on a 267-acre site in the foothills of the Tucson Mountains west of the city.

The College's first classes met in the fall of 1969 at Tucson Medical Center, Villa Maria, and Marana. In the fall of 1970 Pima College officially opened its doors to 3,543 students. Classes were held in unlikely quarters, a hangar at Tucson International Airport. By January of 1971, students in all programs attended classes in the 11 buildings on Anklam Road — today's West Campus, which has expanded to include a center for the arts to serve about 15,000 students annually.

Expansion and evolution soon began. In 1972 the board renamed the institution Pima Community College to better reflect its mis-

sion of service to the community. It began to offer greater access through additional campuses.

In 1974 the College opened the Downtown Campus at Stone Avenue and Speedway Boulevard. The first classes were held in a remodeled post office building. With the purchase of neighboring structures and the construction of the campus center and classroom technology building, the campus grew to 10 buildings. The campus currently serves about 12,000 students annually.

In 1975 the College established the Community Campus to supplement traditional on-campus education. After occupying several sites, the permanent Community Campus facility opened in 1997 near St. Mary's Road and Interstate 10 and serves about 17,000 students annually.

The College established the East Education Center in 1976, which became the East Campus in 1980. Located on a desert site east of Davis-Monthan Air Force Base, the campus doubled in size in the fall of 1989 with the construction of the student union and library. It has since expanded to accommodate more than 8,000 students annually. In 2004, the College and Tucson Parks and Recreation built a 21-acre park on the northwest edge of the campus, with soccer and softball fields, and a fitness facility for students.

The South Education Center opened in 1986, and by 1993 had grown into the Desert Vista Campus, located near Interstate 19 and Valencia Road. Annually, the campus serves 7,000 students, including many who use the training and student services of the Center for Training and Development. The campus also houses a charter high school serving American Indian students.

The Northwest Community Learning Center opened in 1998 and in fall 2003 was replaced by Northwest Campus on North Shannon Road. The Northwest Campus offers a full spectrum of educational, recreational and cultural programs and services to more than 6,000 students annually. Major areas of study include the arts and sciences, health careers and hotel and restaurant management.

For many of its 45 years, Pima Community College has ranked among the largest multi-campus community colleges in the nation, and currently serves more than 42,000 students annually.

## Pima County Community College District Presidents/Chancellors

### Presidents

Dr. Oliver Lane	1967-1969
Dr. Kenneth Harper	1969-1972
Dr. Irwin Spector	1972-1978
Donald Klaasen (Acting)	1978-1979
Dr. S. James Manilla	1979-1988
Diego Navarrette	1988-1989
Dr. Brenda Beckman (Acting)	1989-1990
Dr. Johnas Hockaday	1990-1992

### Chancellor (*title change*)

Dr. Johnas Hockaday	1992-1995
Dr. Robert Jensen	1995-2003
Dr. Roy Flores	2003-2012
Dr. Suzanne Miles (interim)	2012-2013
Dr. Zelema Harris (interim)	2013
Lee D. Lambert, J.D.	2013-present

# Pima County Community College District

## District Office

4905 E. Broadway Blvd.  
Tucson, AZ 85709-1010  
520-206-4500  
520-206-4530 (TTY)

## Maintenance and Security

6680 S. Country Club Road  
Tucson, AZ 85709-1700  
520-206-2733  
520-206-2682 (TTY)

## Campuses

### Community Campus

401 N. Bonita Ave.  
Tucson, AZ 85709-5000  
520-206-3933

### Desert Vista Campus

5901 S. Calle Santa Cruz  
Tucson, AZ 85709-6000  
520-206-5101

### Downtown Campus

1255 N. Stone Ave.  
Tucson, AZ 85709-3000  
520-206-7171

### East Campus

8181 E. Irvington Road  
Tucson, AZ 85709-4000  
520-206-7000

### Northwest Campus

7600 N. Shannon Road  
Tucson, AZ 85709-7200  
520-206-2200

### West Campus

2202 W. Anklam Road  
Tucson, AZ 85709-0001  
520-206-6600

## Educational Centers and Offices

### Alumni Association

(See District Office)  
4905C E. Broadway Blvd.  
Tucson, AZ 85709-1320  
520-206-4646

### Aviation Technology Center

7211 S. Park Ave.  
Tucson, AZ 85709-6185  
520-206-5910

### Center for the Arts

(See West Campus)  
2202 W. Anklam Road  
Tucson, AZ 85709-0295  
520-206-6986

### Center for Learning Technology

(See Community Campus)  
401 N. Bonita Ave.  
Tucson, AZ 85709-5000  
520-206-6410

### Center for Training and Development

(See Desert Vista Campus)  
5901 S. Calle Santa Cruz  
Tucson, AZ 85709-6365  
520-206-5100

### Center for Transportation Training

(Truck Driver Training site at  
Maintenance & Security)  
6680 S. Country Club Road  
Tucson, AZ 85709-1850  
520-206-2744

### Davis-Monthan Air Force Base Education Center

5355 E. Granite St.  
Building 2441, Suite 100  
Tucson, AZ 85707-3011  
520-206-4866

### Adult Basic Education for College & Career Administrative Offices

(See Community Campus)  
401 N. Bonita Ave.  
Tucson, AZ 85709-5600  
520-206-6500

### El Pueblo Liberty Adult Learning Center

101 W. Irvington Road  
Building 7  
Tucson, AZ 85709-5640  
520-206-3737

### HSE/GED® Testing

Community Campus,  
East Campus and Northwest Campus  
520-206-3987

### El Rio Adult Learning Center

1390 W. Speedway Blvd.  
Tucson, AZ 85709-5630  
520-206-3800

### PCC 29th Street Coalition Center Adult Learning Center

4355 E. Calle Aurora  
Tucson, AZ 85709-5000  
520-206-3550

### Pima Community College Foundation

(See District Office)  
4905C E. Broadway Blvd.  
Tucson, AZ 85709-1320  
520-206-4646

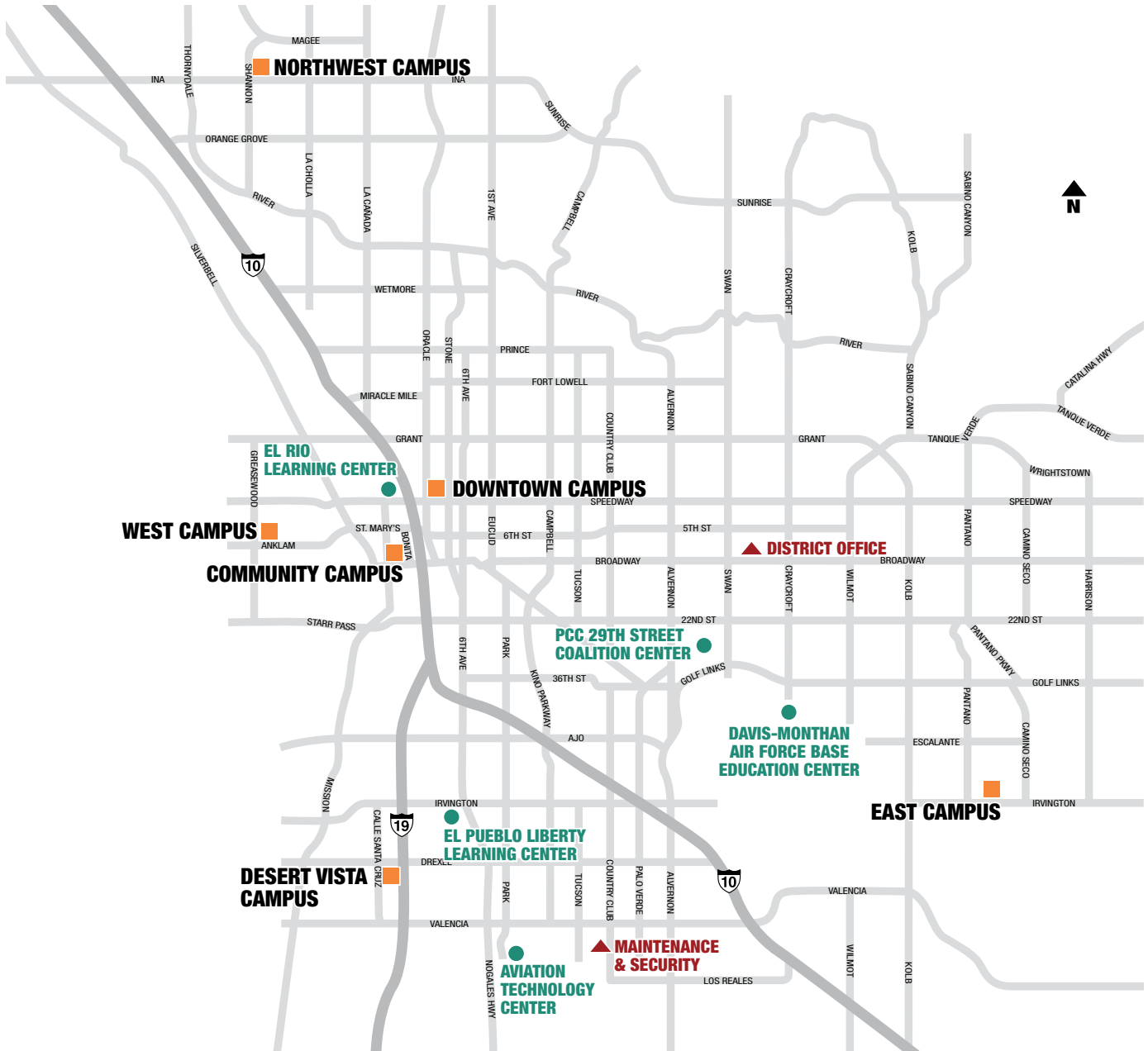
### Public Safety and Emergency Services Institute - PCC 29th Street Coalition Center

4355 E. Calle Aurora  
Tucson, AZ 85709-5000  
520-206-3535

### Workforce Development and Continuing Education

(See Community Campus)  
401 N. Bonita Ave.  
Tucson, AZ 85709-5500  
520-206-6593

# College Locations







## Community Campus

The Community Campus responds to the changing and growing needs of our dynamic student population and the needs of employers by offering degrees, certificates, training and comprehensive student services that include online advising, tutoring and technical support.

The Community Campus has been serving students since 1975, offering credit classes, workforce training and community education options at its campus location, 401 N. Bonita Ave., and at more than 100 facilities throughout southern Arizona. It is the lead campus for PimaOnline, the College's distance education program, which offers a variety of courses, certificate and degree programs that can be completed fully online, as well as several Web-classroom hybrid options. The degree and certificates offered in a fully online format include the Associate of Business Administration degree for Transfer; Associate of Arts degree for Transfer in Liberal Arts; Associate of General Studies degree for Transfer; Associate of Applied Science degree and Certificate in Health Information Technology and a Certificate in Human Resources. The Continuing Education programs and services include general interest classes, programs for active adults, Ed2Go online courses, Pima for Kids classes (ages 5-12), Teen Scene classes (for teenagers and young adults), workshops and seminars. The Back to Work 50+ program, sponsored by the AARP Foundation, is a free program that connects job seekers, age 50 and older, with information, workshops, support and training to get back into the workforce. The campus also houses the Employer Engagement and Career Services office, which provides work-based learning (internships) and, in partnership with program faculty and staff, facilitates employment opportunities.

The Adult Basic Education for College and Career (ABECC) division offers opportunities for adult learners to strengthen their basic literacy and math skills, improve their English, study for a High School Equivalency (HSE) diploma, take the GED® test, increase their civic involvement, study concurrently in adult basic education classes and occupational certificate programs, take vocational training and prepare for community college. ABECC classes are free to students and are located at several community sites throughout Pima County, PCC campuses and three large urban learning centers: El Pueblo Liberty Learning Center; El Rio Learn-

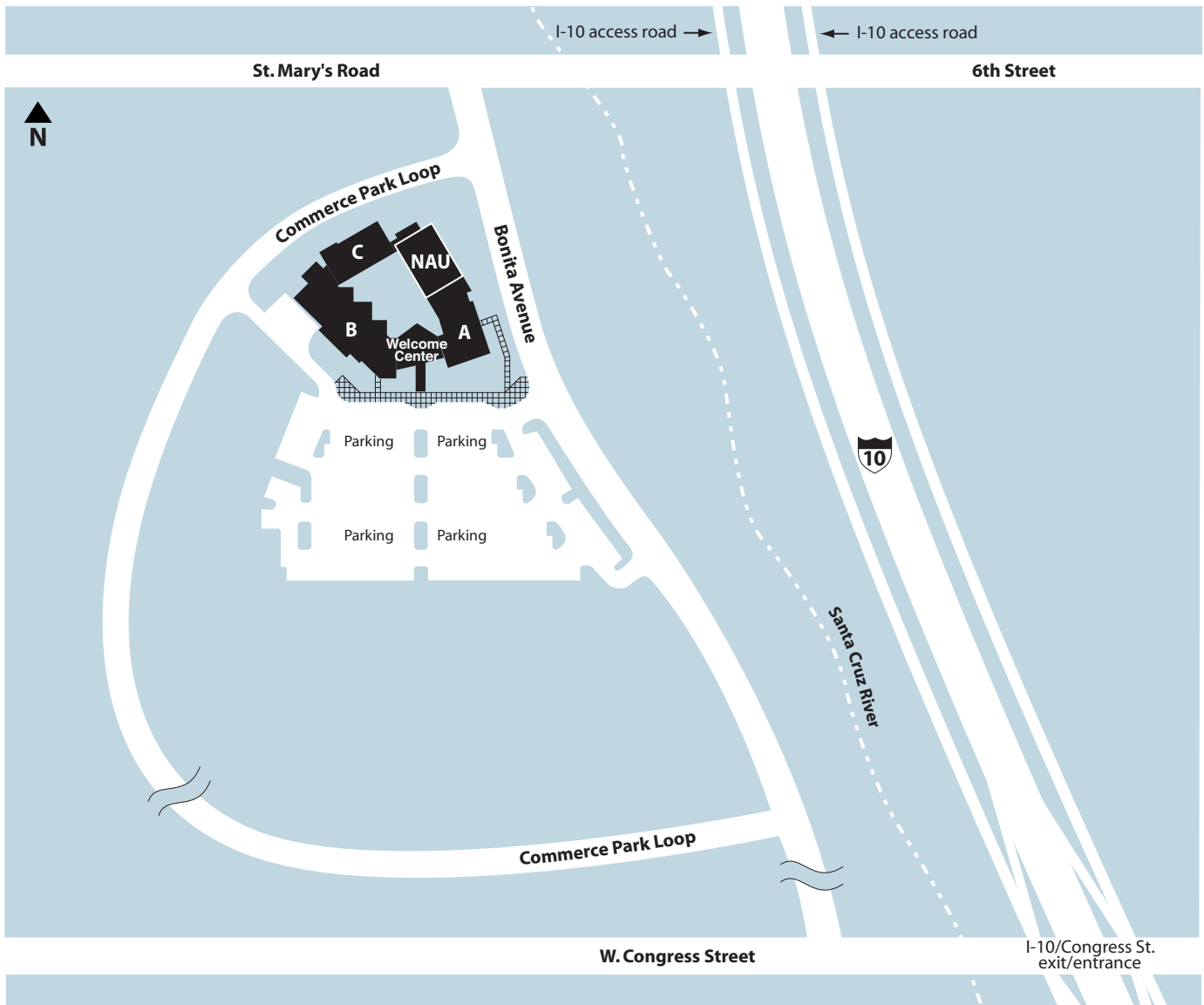
ing Center and the 29th Street Coalition Center. Adult education classes are taught by certified, adult educators in classrooms, computer labs, and with hybrid and distance learning methods. Its additional programs and services include: High School Equivalency Testing; Test for Adult Basic Education (TABE) and other occupational certification exams; student services; tutoring and basic literacy services; citizenship preparation classes; bridge classes; Integrated Basic Education and Skills Training (IBEST) programs; civics and student leadership education; AmeriCorps and Refugee Education.

The Workforce and Business Development unit offers a wide range of traditional and customized courses, certificates and programs developed in industry-specific disciplines, training and continuing education unit (CEU) courses to meet the needs of regional employers. It provides comprehensive, cost-effective training options for individual workers, as well as for businesses, organizations and governmental agencies on a contractual basis. These courses may be offered in person or online, at a location and at times convenient for the client. The campus also offers an Associate of Applied Science Business and Industry Technology (AAS-BIT) degree program that includes industry certification options ranging from A+ and Net+ to Cisco. Also, through a partnership with Arizona@Work, the division helps displaced workers, veterans, youth and unemployed individuals who receive Workforce Investment Act funds to take classes.

Community Campus oversees the Public Safety and Emergency Services Institute (PSESI), which offers open enrollment courses and partners with public and private agencies to provide associate degrees and certificates in law enforcement, fire science, corrections, crime scene management and emergency medical technology. Its Arizona Prison Program contracts with federal and state agencies to provide business and occupational training programs for inmates. Educational training for incarcerated populations has shown to improve recidivism rates.

It also oversees the Center for Transportation Training (CTT). CTT offers truck driver training, motorcycle rider education and traffic survival school classes. The Truck Driver Training program offers trainings for Class A Commercial Driver's license or Class B Commercial Driver's license with a passenger endorsement. These licenses/endorsements allow for direct employment in the trucking and bus industry. The campus also houses the Center for Learning Technology (CLT), home to the College's PCCTV cable television station. PCCTV airs educational videos on a variety of topics and produces many other special programs of interest for the community.

The Community Campus also hosts the Small Business Development Center (SBDC). The SBDC provides no-cost, one-on-one counseling and no- or low-cost workshops to anyone who wants to start a small business or who already owns a business. It also houses Northern Arizona University (NAU) offices, an interactive classroom and labs, and distribution control for NAU distance learning operations throughout southern Arizona.



## Community Campus

### Area A:

- Back to Work 50+ Program
- Center for Learning Technology
- Conference and Training Center
- Employer Engagement and Career Services
- High School Equivalency & Certification Testing
- High Tech Training Rooms
- Small Business Development Center
- Workforce Development and Continuing Education Services

### Area B:

- Adult Basic Education for College & Career Administration
- Administrative and Business Services
- Admissions and Registration
- Advising and Counseling
  - Assessments/Testing
  - Online Help Desk (520-206-6310)

### Area B:

- Career Counseling
- Cashier's Office
- Instructional Administration
- Receiving/Mailroom Services
- Student Development

### Area C:

- Center for Learning Technology
  - Telecommunications and Production Services
  - Telecourse and Interactive Classroom Distribution Center
  - Broadcast Studio
- Integrated Instructional Resource Center

### NAU

- Northern Arizona University Classrooms
- NAU Administrative Offices



## Desert Vista Campus

In 1986, Pima Community College opened Education Center South near Tucson International Airport in response to requests from residents of the south and southwest areas of Tucson. In June 1993, the College established a new and comprehensive Desert Vista Campus near Interstate 19 and Drexel Road by relocating the Education Center South and Center for Training and Development (formerly Tucson Skill Center, established in 1963).

Desert Vista Campus serves about 7,000 students a year, offering a wide range of courses and programs, including university transfer, developmental, occupational, workforce and general education. A variety of courses are offered in mathematics, the sciences (biology, chemistry, astronomy and physics), Spanish, and a rich cultural arts curriculum. The campus provides signature training in Culinary Arts, Early Childhood Education, and Child Development. The campus also offers a post-baccalaureate Teacher Certification program.

The Center for Training and Development (CTD) offers many non-credit and credit workforce development programs, including phlebotomy, behavioral health, surgical technology, business education, medical assisting and food service. CTD partners with community-based organizations, agencies and employers to provide individualized year-round, open-entry/open-exit job training certificate programs for employment.

Desert Vista Campus students have a rich array of services available to support academic success. In early 2017, under a Title V grant, the campus completed a \$1 million renovation of the second floor of the Plaza building. The renovation seamlessly integrated the library and computer commons, along with tutoring for English, mathematics, science and adult basic education. This Integrated Learning Center serves students, faculty, college employees and the community with a welcoming atmosphere and versatile student space. It offers 16 study rooms, each equipped with power for charging electronic devices, and comfortable seating options that allow students to write on glass walls. A Cyber

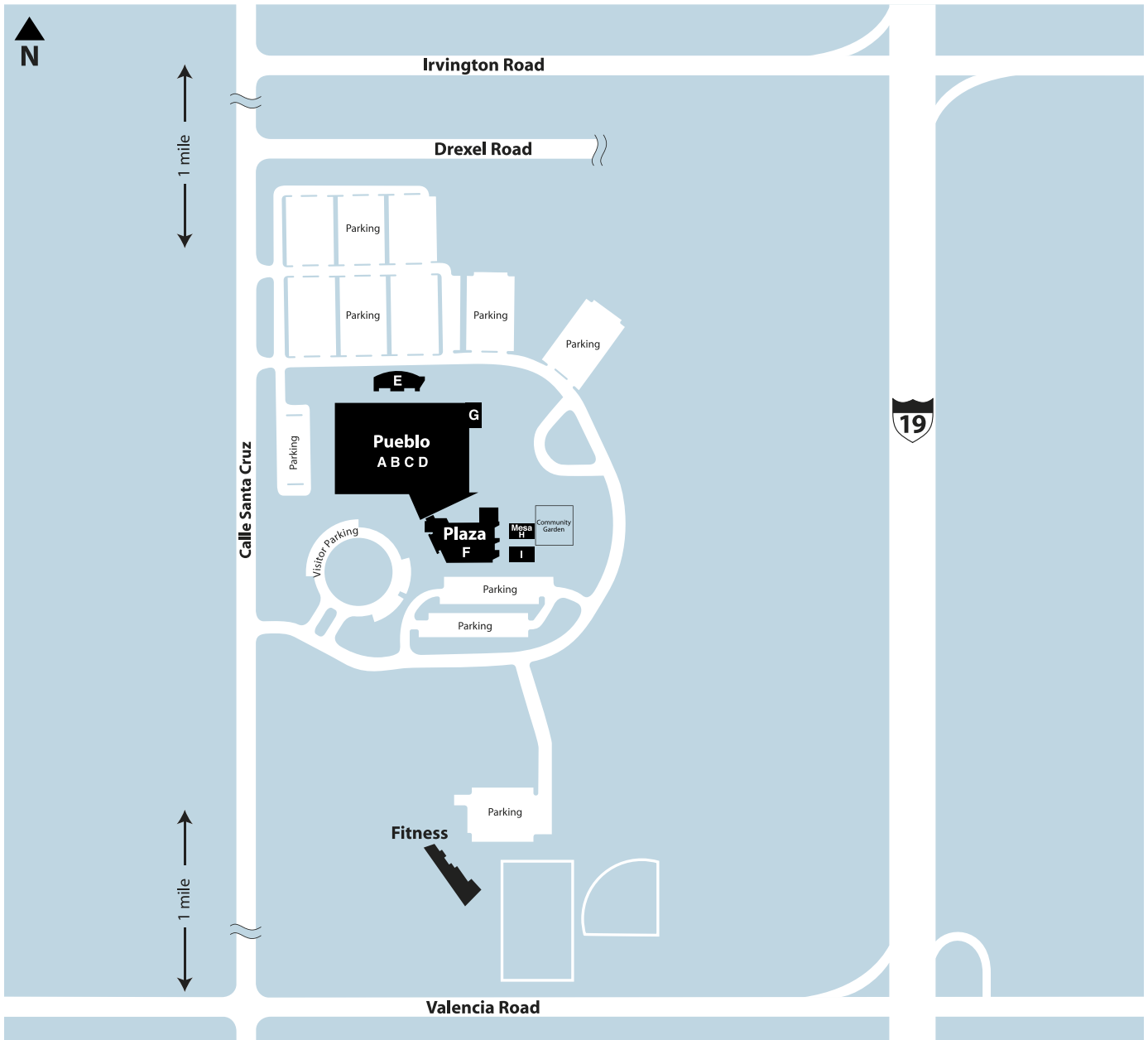
Café, located in the center of campus, offers a comfortable and relaxed environment where students can access the Internet.

Desert Vista Campus is home to a Campus Garden, providing a learning environment for the culinary, science, and the Project PATH (Plant, Assimilate, Till, Harvest) program for students interested in agricultural majors. The campus also provides bilingual services and a full range of student support services for both credit and noncredit students through the Student Services Center.

It also houses Vision High School, a charter school that mainstreams dually enrolled high school students into the community college environment. The campus administers several federally funded programs, including the Title V CIMA, Educational Talent Search, Student Support Services and Upward Bound programs. Talent Search works with high school students to encourage and support their successful transition into post-secondary education. Upward Bound works with high school students to provide higher education opportunities and tracks the students during their first two years of college. Other programs provide structures and support to increase student success. Additionally, the campus is part of a Pathways to Healthcare network funded by a federal Health Profession Opportunity Grant (HPOG) to provide health care training. The campus also houses the Tohono O'odham Scholarship Office, which provides on-site counseling and advising to tribal students pursuing higher education.

The campus houses a recreation and fitness complex. Built in partnership with the City of Tucson Parks and Recreation Department, the complex contains a fitness facility that provides space for activity classes, such as kick-boxing, aerobics and yoga, as well as strength training. The center also has state-of-the-art equipment, and instructors and staff certified as personal trainers. The complex also has soccer and softball fields available for college and community use as part of the partnership.





## Desert Vista Campus

### Campus Garden

### Health Sciences Laboratory (E)

Surgical Technology Lab  
Nursing Lab  
Health Sciences Simulation Lab

### Mesa Buildings (H and I)

HPOG Offices  
Mesa Classes  
Nursing Offices

### Pueblo Building (A, B, C, D and G)

Adjunct Faculty Offices  
Administrative Offices  
Bookstore  
Cafeteria  
Campus Information Technology Services  
College Police  
Center for Training and Development Programs

Classrooms  
Community Outreach  
Culinary Kitchens  
Faculty Offices  
Faculty Resource Center  
Laboratories  
Learning Center  
Student Life  
Student Support Services  
Educational Talent Search  
Upward Bound  
Vision High School

### Plaza Building (F)

Access and Disability Resources  
Admissions/Registration  
Advising and Counseling  
Assessment/Testing Center  
Business Office  
Career and Transfer Center

Cashier  
Classrooms  
Community Room  
Computer Commons  
Financial Aid  
Library  
Student Services  
Tech Corner  
Tohono O'odham Scholarship Office  
Welcome Center

### Fitness Building

Fitness Classrooms

### Aviation Technology Center (not on map)

**7211 S. Park Ave.**  
Aviation Classrooms/Laboratories  
Avionics Classrooms/Laboratories



## Downtown Campus

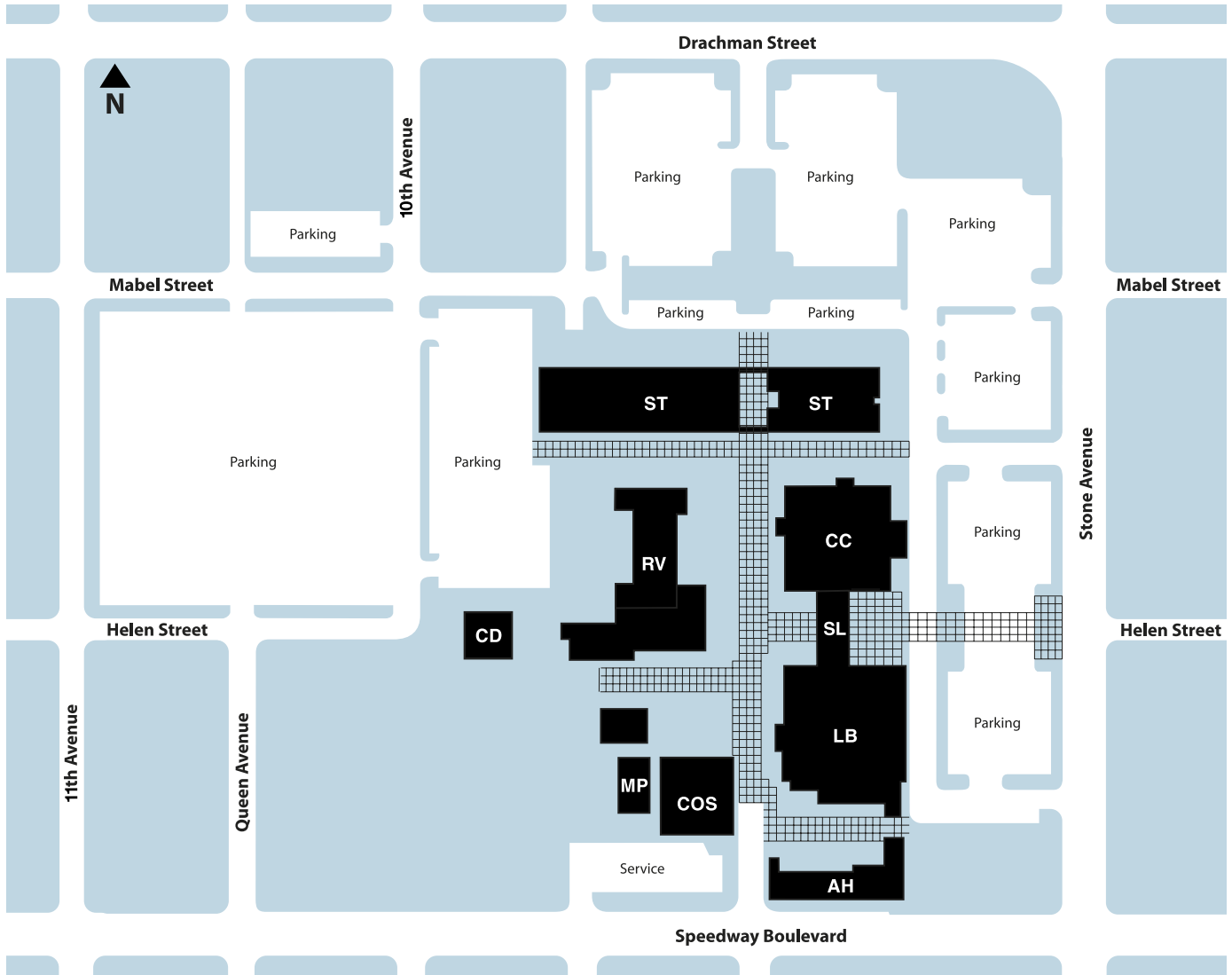
Since its inception in 1974, the Downtown Campus has offered a variety of opportunities for students to enhance their personal, academic and professional lives. Just minutes from the University of Arizona, the Ronstadt Transit Center and the heart of downtown Tucson, the campus serves about 13,000 students annually.

Students find knowledgeable faculty and staff offering exciting learning opportunities through convenient class scheduling at an affordable cost. A balance of developmental education, academic instruction and occupational course offerings create student success pathways that provide the foundation for either university transfer or the occupational skills needed for direct entry into the workforce.

Among the signature programs provided by the campus is the Aviation Technology Program, based at the Aviation Technology Center on the grounds of Tucson International Airport. This program provides training in aviation maintenance, structural repair and avionics, and is one of only a few programs of its kind nationwide. In 2008, a new avionics building was added to the Aviation Technology Center, and students can pursue a certificate in avionics using state-of-the-art equipment.

In addition to excellent instruction, and in order to achieve our campus mission “to provide a quality learning experience leading to student success,” Downtown Campus offers comprehensive student support systems, including counseling, academic advising, financial assistance, tutoring services, abundant library resources, directed learning with open labs, accommodations for students with disabilities, a state-of-the-art Veterans Center and a safe learning environment.

The Downtown Campus’ strengths include its diverse student population, committed faculty and staff, varied educational and occupational offerings and proximity to the university, public transportation and the city’s center. The campus leverages these strengths to assist students in achieving their education and career goals.



## Downtown Campus

### Arts and Humanities (AH)

Classrooms  
Language Lab

### Campus Center (CC)

Adjunct Faculty Resource Center  
Amethyst Room  
Bookstore  
Cashier  
Classrooms  
Communications Division Office  
Curriculum  
Faculty Offices  
Gemstone Café  
Media Services  
Student Lounge  
The Art Gallery @ Downtown Campus

### Campus Operations (CO)

Administrative Services  
Business Services  
Campus Police  
Copy Center  
Facilities Operations  
Information Technology  
Mail Room

### Central Plant (MP)

### Child Development (CD)

Science Classrooms

### Library (LB)

Access and Disability Resources  
Assessment Center  
Bibliographic Instruction  
Career Services  
Counseling  
Learning Commons  
Computers  
Library  
Testing  
Tutoring  
Writing  
Student Life

### Roosevelt (RV)

Campus Administration  
Classrooms  
Scheduling  
Veterans Center

### Science and Technology (ST)

Applied Technology Division Office  
Automotive Technology  
Biology Lab  
Building and Construction Technologies  
CAD Lab  
Classrooms  
Computer Classroom  
Facilities Technology  
Faculty Offices  
Machine Tool Technology  
Welding Technology

### Student Link (SL)

Student Services  
Admissions  
Advising  
Financial Aid  
Registration  
Welcome Center





## East Campus

In 1976, the College established the East Education Center, which became East Campus in 1980. Four subsequent expansions now have given the residents of Tucson's East Side a comprehensive and convenient full-service campus that offers general education, university transfer, developmental coursework and selected occupational programming.

The East Campus provides career and technical preparation in the areas of Emergency Medical Technology, Pharmacy Technology, Logistics and Supply Chain Management, Veterinary Technology, and Administration of Justice Studies at the campus and online. In fall 2016, the East Campus received a five-year U.S. Department of Education HSI STEM (science, technology, engineering, mathematics) grant totaling \$3.1 million to help graduate more Hispanic and underserved students attaining degrees in STEM fields. The grant will fund three major goals: Increase the number, persistence and success of Hispanic/low-income students majoring in STEM degree programs; increase the number of Hispanic/low-income students graduating with a STEM associates or certificate; and increase the number of Hispanic/low-income students retained in STEM programs after transfer.

The Student Life office shapes much of the student life experience at East Campus. This highly active organization serves the entire student body by sponsoring and organizing a wide variety of op-

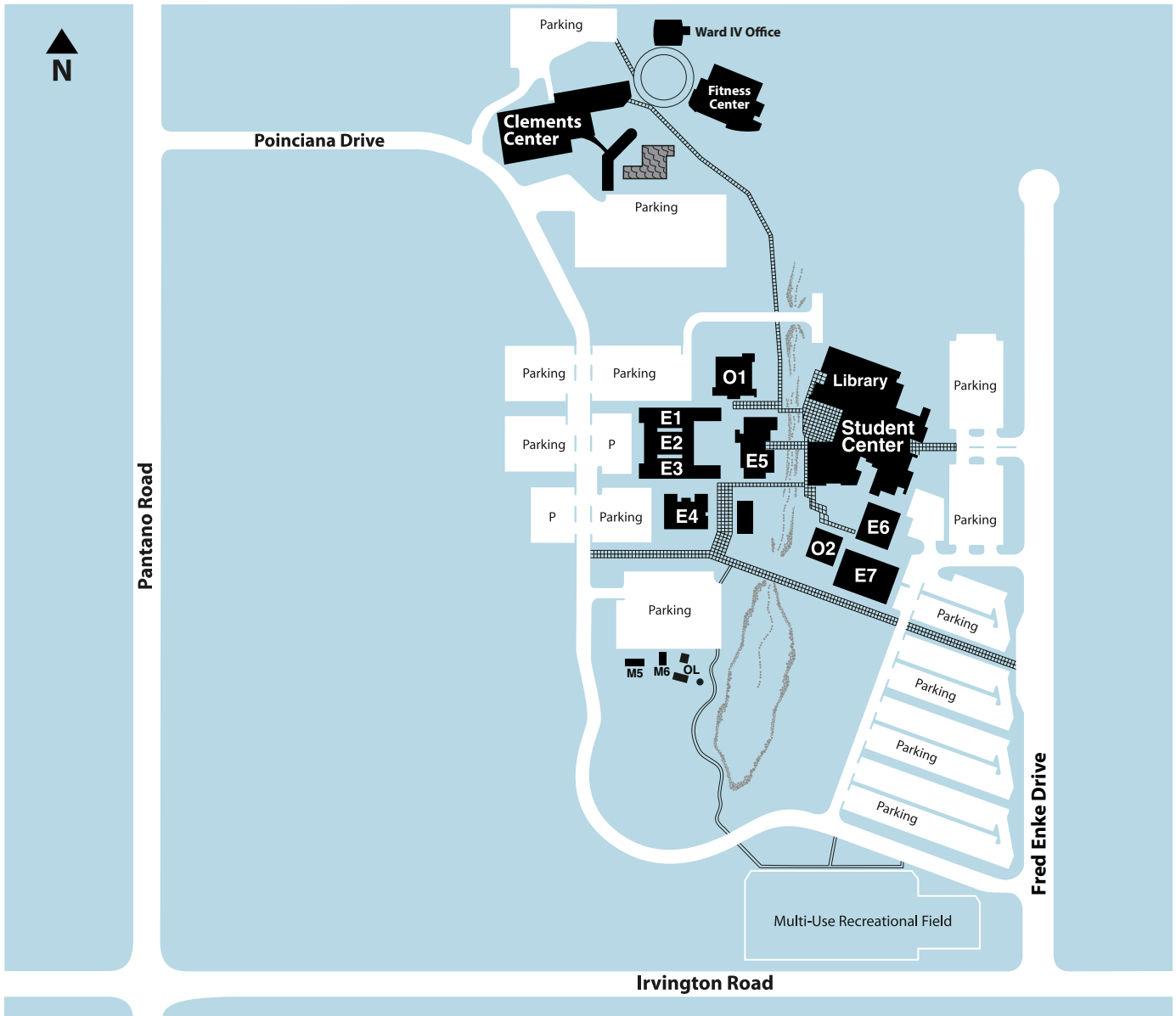
portunities to enhance personal success. These activities range from community service projects to campus social events.

The East Campus oversees the Davis-Monthan Air Force Base (DMAFB) Education Center. Classes on DMAFB are, primarily, eight-week sessions. Classes are taught in the evenings or on the weekends, and in traditional or web/classroom hybrid formats to provide flexibility and convenience. The classes and services offered on DMAFB are available to everyone.

The East Campus is also home to the University of Arizona South. Students who transfer to the UA South can take classes on campus or online. The East Side Health Clinic is also located on the East Campus. The clinic is available to the entire community.

Sitting on almost 58 acres near Pantano and Irvington roads, the campus is adjacent to the Fred Enke Golf Course, Lincoln Regional Park, the Atterbury/Lyman Bird and Animal Sanctuary, and the City of Tucson's Clements Recreational Center. Surrounded by natural Sonoran Desert vegetation, the East Campus maintains a relaxed, comfortable atmosphere, with buildings clustered around several small patios and shaded courtyards.





## East Campus

### Buildings O1, O2

Administrative Offices  
Faculty Offices

### Buildings E-1, E-2, E-3, E-7

Classrooms  
Science Laboratories

### Building E-4

Classrooms  
Emergency Medical Technology (EMT) Lab  
UA South Offices

### Building E-5

Adjunct Faculty Service Center  
Art Gallery and Studios  
Audio/Visual and Faculty Resource Center  
Classrooms  
Mail Center

### Building E-6

College Police  
Classrooms  
Physical Plant  
Receiving  
Student Life and Student Government  
Veterinary Technology Lab

### Buildings M5, M6, OL

Astronomy Lab  
Classrooms  
Outdoor Learning Center

### Clements Center

Classrooms  
Recreational Facilities

### Library

Classrooms  
Computer Support Services  
Learning/Tutoring Center  
Sign Language Lab

### Student Center

Access and Disability Resources  
Administrative Offices  
Admissions and Registration  
Advising  
Assessment/Testing Center  
Bookstore  
Business Office  
Cafeteria  
Career Center  
Cashier  
Classrooms  
Community Room  
Computer Commons  
Counseling  
Financial Aid & Veterans Services  
East Side Health Center  
Welcome Center



## Northwest Campus

The Northwest Campus brings a full spectrum of educational, recreational and cultural programs and services to families in northwest Tucson.

Courses are offered at the campus and online in accounting; information technology; business; psychology; social sciences; languages and communication; arts and humanities; and sciences and mathematics.

The heart of the campus includes student support services such as a comprehensive Student Services Center, a multifunctional redesigned Student Life Center, Library, Tutoring and Campus Resource Center. Campus facilities also include classrooms; labs for biology, chemistry, astronomy, physics, geology and geography, an art gallery, and state-of-the-art technology classrooms. A beautiful promenade and outdoor amphitheater provide opportunities for students, faculty, staff and community visitors to gather in relaxed settings.

The Northwest Campus is the only location that offers occupational programs in Therapeutic Massage, Clinical Research Coordinator, and Hotel and Restaurant Management. The Therapeutic Massage program offers both a certificate and an AAS that prepare students for state or national licensure. The Clinical Research Coordinator Program certificate or AAS prepares students to coordinate human subject clinical trials.

Through a unique partnership between the College and Northern Arizona University, students may earn a bachelor's degree in Hotel and Restaurant Management from NAU at the Northwest Campus. The first two years of the program, the associate degree, are offered by the College and all of its credits transfer into the NAU program. The last two years of the degree are taught by NAU faculty on the Northwest Campus. A certificate for direct employment for those seeking an immediate, entry-level job in the hotel, resort and restaurant industry also is available.

In addition, the Northwest Campus continues to develop new programs, certificates and courses to meet current educational needs of students. The campus partners with the K-12 community, including offering a wide variety of dual enrollment options.

Through partnerships with the Northwest YMCA and Pima County Parks and Recreation, PCC allows students to take a full range of fitness, wellness and dance classes.

A 49,000-square-foot building houses state-of-the-art classrooms and labs, general use classrooms, additional faculty space and a mock hotel front desk and guest suite, providing hands-on training for students in the Hotel and Restaurant Management Program.



## Northwest Campus

### Building A

- Level 1 (Boulevard)**
  - Administrative and Business Services
  - Campus President Classrooms
- Level 2 (Promenade)**
  - Classrooms
  - Community Room
  - Therapeutic Massage Program
  - Upward Bound Program
- Level 3**
  - Campus Vice President Classrooms
  - Faculty Offices
  - Fine Arts Studio
  - Student Art Gallery

### Building B

- Level 1 (Boulevard)**
  - Cashier
  - Student Services Center (Admissions/ Registration/ Counseling/Advising/ Financial Aid/Career Center/ Access and Disability)

- Resources /Assessment and Testing)
- Dean of Mathematics and Student Development
- Level 2 (Promenade)**
  - Campus Resource Center
  - Computer Commons
  - IT Services
  - Tech Corner
  - Tutoring/Group Study Rooms
- Level 3**
  - Group Study Rooms
  - Library
  - Sign Language Lab
  - Technology Classroom

### Building C

- Level 2 (Promenade)**
  - Bookstore
  - Café
- Level 3**
  - Conference Rooms
  - Dean of Science
  - Faculty Offices
  - Video Conference Room

### Building D

- Level 1 (Boulevard)**
  - Adult Basic Education Classrooms
- Level 2 (Promenade)**
  - Student Life
- Level 3**
  - Classroom/Labs
- Building E**
  - Level 2 (Promenade)**
    - College Police
    - Central Receiving
    - Classrooms
    - Mailroom
  - Level 3**
    - Science Classrooms/Labs

### Building G

- Level 1**
  - Classrooms
- Level 2**
  - Classrooms/Lab
  - Faculty Offices
  - Student Lounge

- Testing Room
- Level 3**
  - Classrooms/Lab

### Building L

- Level 3**
  - Classrooms

### Building M

- Level 2**
  - Veterans Offices and Program

### YMCA Facilities

- Classrooms
- Courts
- PCC Fitness and Sport Sciences Classes
- Pool

### Pima County Parks and Recreation Athletic Fields



## West Campus

The West Campus provides a full range of Nursing and health-related programs that include an associate degree in Nursing, Dental Studies, Radiologic Technology, Respiratory Therapy and Medical Lab Technician. The Nursing and health-related programs have state-of-the-art classrooms, simulation labs and updated technologies. Its renovated dental clinic provide Dental Assisting, Dental Laboratory Technology, and Dental Hygiene students a real-world educational experience, better preparing them for employment, as well as building a solid educational foundation for further post-secondary education.

The West Campus also provides outstanding programs in Fashion Design, Journalism and the Visual and Performing Arts. The campus is known for its state-of-the-art Digital Arts program that offers cutting edge curriculum in computer animation, game design, digital design, illustration, film video, multi-media, photography and desktop publishing. Digital Arts program students have won numerous national Addy Awards through the American Advertising Federation national student advertising competition. In addition, the campus offers programs in business, computers, archaeology, sign language, interpreter training, social and behavioral sciences, as well as fitness and sport sciences.

The West Campus is home to an Archaeology Center, Center for the Arts, and two art galleries, the Louis Carlos Bernal Gallery and the Student Gallery. The campus also houses the Center for International Education and Global Engagement, Aztec Press student newspaper and the NJCAA-affiliated athletics department.

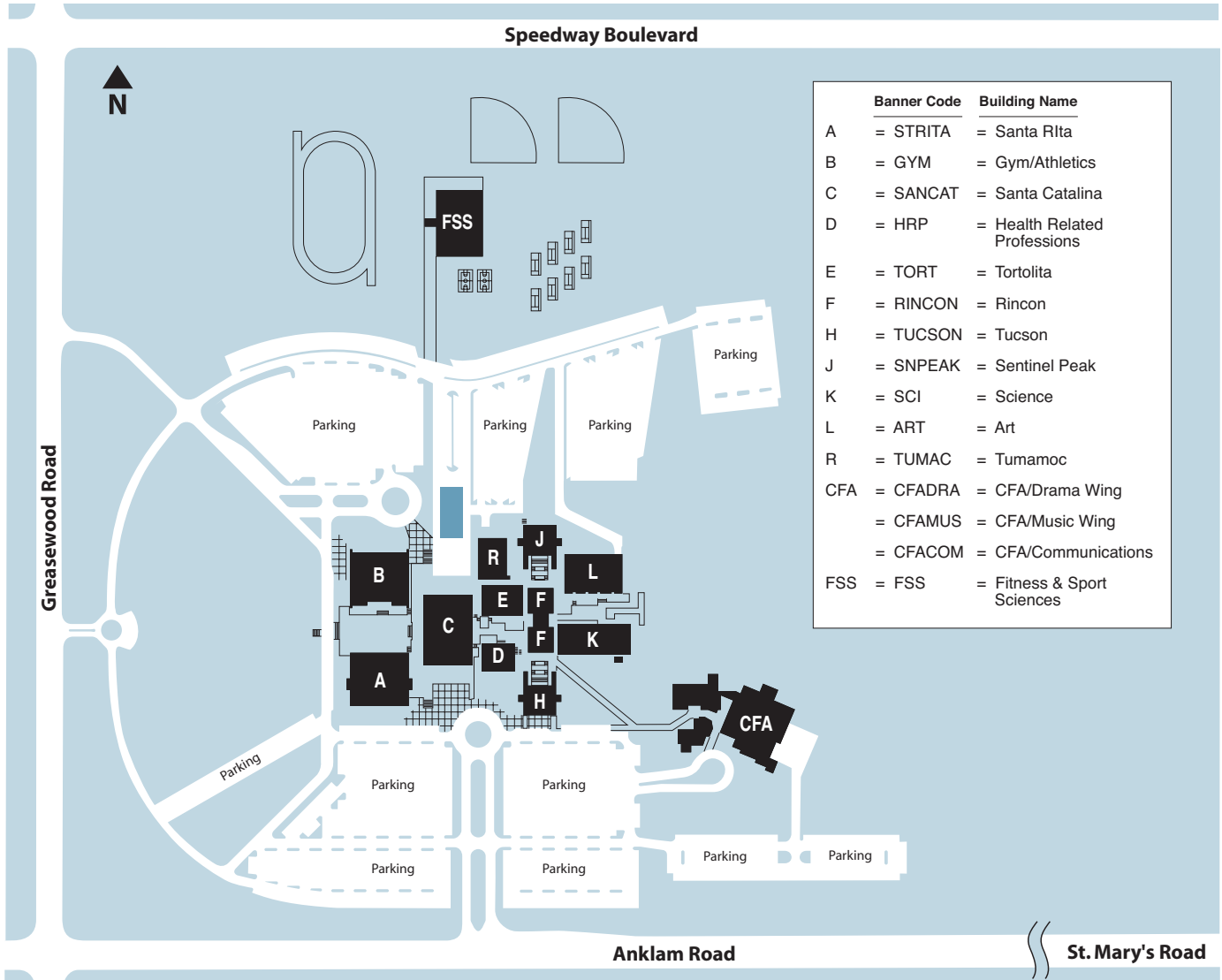
West Campus students have multiple opportunities to participate in co-curricular activities, including approximately 20 student clubs, student government and intercollegiate athletics.

Designed to blend with the surrounding desert, the campus features inner courtyards and several hiking trails on 267 acres. It comprises 13 buildings and 529,000 square feet of space that in-



cludes 154 classrooms and laboratories, a library, Academic Computing Commons and Learning Center.





## West Campus

### A (Santa Rita)

#### Ground Floor

Cafeteria  
Classroom  
Dance Room 1  
Dance Room 2  
Employee Lactation Room  
Student Life and Student Government and Clubs  
West Side Health Center

#### First Floor

Classrooms  
Computer Classrooms and Labs  
Faculty Offices

#### Second Floor

Administrative Services  
Campus President  
Classrooms  
Copy Center  
Faculty Resource Center  
Veterans Meeting Room  
Vice President of Instruction  
Vice President of International Development  
Visual Arts Student Gallery

### B (Gym/Athletics)

#### Ground Floor

Basketball and Volleyball Court  
Coaches' Offices  
Equipment Room  
Locker Rooms

#### First Floor

Dance Room  
Dean of Athletics, Fitness and Wellness  
Fitness Classroom

### C (Santa Catalina)

#### Ground Floor

Aztec Press/Journalism  
Bookstore  
Classrooms  
Digital Arts  
Faculty Offices  
Fashion Design and Clothing  
Film Studio  
Photography Lab  
Plant Operations

#### First Floor

Access and Disability Resources  
Business Services  
Cashier  
Student Services Center:  
Admissions and Registration  
Advising and Counseling  
Assessment/Testing Center  
Career Services  
Center for International Education and Global Engagement  
Financial Aid  
Veterans Services  
Vice President of Student Development

#### Second Floor

Academic Computer Commons  
Classrooms  
Learning Center

#### Third Floor

Library

### D (HRP)

First Floor  
Classrooms

Dean of Nursing  
Nursing Lab  
Simulation Lab

#### Second Floor

Faculty Offices

### E (Tortolita)

#### First Floor

Classrooms  
Technology Lab

#### Second Floor

Dean of Science, Technology, Engineering and Math  
Faculty Offices

### F (Rincon)

#### First Floor

Classrooms  
Geology Classroom  
Physics Lab  
Rincon Cafe

#### Second Floor

Faculty Offices  
Lecture Rooms

**H (Tucson)****Ground Floor**

Classrooms  
 Dean of Health Related  
 Professions  
 Respiratory Skills Labs

**First Floor**

Classroom  
 Dean of Business, Computers,  
 World Languages, Social  
 Sciences and Fitness and  
 Sport Sciences  
 Faculty Offices

**Second Floor**

Classrooms  
 Sign Language Lab

**Third Floor**

Classrooms  
 Engineering and Technology

**J (Sentinel Peak)****Ground Floor**

Classrooms  
 Saguaro Room

**First Floor**

Classroom  
 Dean of Arts, Communications  
 and Humanities  
 Faculty Offices

**Second Floor**

Classrooms

**Third Floor**

Classrooms  
 Faculty Offices

**K (Science)****First Floor**

Biology Lab  
 Biotechnology Lab  
 MLT Lab  
 Radiologic Tech Lab

**Second Floor**

Chemistry Lab  
 Classrooms  
 Dental Clinic  
 Dental Lab

**L (Art)**

Art Studios and Classrooms  
 Faculty Offices

**R (Tumamoc)**

Archaeology Centre  
 College Police  
 Receiving and Mailroom  
 Technology Services

**CFA (Center for the Arts)**

Black Box Theatre  
 Box Office  
 CFA Offices  
 Classrooms and Studios  
 Communication Wing  
 Drama/Theatre Wing  
 Faculty Offices  
 Louis Carlos Bernal Gallery  
 Music Wing  
 Proscenium Theatre  
 Recital Hall

**FSSC (Fitness and Sport Sciences Center)**

Athletic Fields/Track/Courts  
 Classrooms  
 Coaches' Offices  
 Faculty Offices  
 Fitness and Conditioning Center  
 (FCC)  
 Group Activities Room  
 Locker Rooms  
 Sports Injury Management Area



# Admissions, Registration and Records



## Admission to the College

Pima Community College (PCC) encourages all individuals to further their education. No person will be denied admission to, or registration for courses at the College on the basis of gender, race, ethnicity, national origin, age, disability, sexual orientation, gender identity or expression.

Some programs at the College have special admissions requirements. Admission to some specific degree or certificate programs cannot be guaranteed. Additionally, there are other programs for which students need to apply separately. For information on some of these programs, please contact the program directly:

Workforce Development and Continuing Education Community Campus	520-206-6569
Center for Training and Development (CTD) Desert Vista Campus	520-206-5100
Adult Basic Education for College and Career (ABECC) Community Campus	520-206-6500
Center for Transportation Training 6680 S. Country Club Road	520-206-2744

## Eligibility for Admission

All individuals who complete the Application for Admission are admitted to the College, issued a student identification number, and assigned an admission classification based on their intent. Admission to the College does not guarantee admission to a specific degree program or to all courses offered by the College.

### I. Admission Classification for Credit Students

The College designates three classifications for credit admission in order to comply with federal regulations and state statutes, and to facilitate College reporting; the three classifications are Regular/Degree-Seeking, Non-Degree Seeking and International. Students in any credit classification are eligible to take any credit course for which they meet the prerequisite(s).

#### A. Classification as Regular/Degree-Seeking

Students who are degree- or certificate-seeking and who fall within one of the following categories pursuant to ARS 15-1805.01 and ARS 15-1821 are classified as Regular/Degree-Seeking:

1. Is a graduate of a high school that is accredited by a regional accrediting association as defined by the United States office of education or approved by a state board of education or other appropriate state educational agency;
2. Has a high school certificate of equivalency;
3. Is a transfer student in good standing from another college or university;
4. Is a homeschooled student at least 18 years of age;
5. Demonstrates evidence of potential success at Pima Community College as outlined in the College's placement evaluation process (SPG-3509/AA);
6. Is under the age of 18 and who achieves one of the following:

- a. A passing score on the relevant portions of the Arizona Instrument to Measure Standards test;
- b. The completion of a college placement test designated by the community college district that indicates the student is at the appropriate college level for the course
- c. Is a graduate of a private or public high school or has a high school equivalency diploma.
- d. Is a homeschooled student and provides supporting documentation that meets state standards.

#### B. Classification as Non-Degree Seeking

Students who intend to take credit classes (for personal interest, skill development, high school dual enrollment, upgrading job skills, or for transfer toward a degree at another institution), and who do not intend to pursue a degree or certificate at Pima Community College are classified as Non-Degree Seeking.

#### C. Classification as International

Students from other countries attending Pima Community College on a visa are classified as International.

## II. Admission Classification for Non-Credit Students

#### A. Clock-Hour Students

Students who are certificate seeking in the College's clock-hour training programs, and who meet the criteria listed in Section I.A. are classified as Regular/Degree-Seeking.

#### B. Adult Basic Education Students

Students pursuing adult education through Adult Basic Education for College and Career are classified as Adult Basic Education.

#### C. Non-Credit Continuing Education Students

Students pursuing continuing education courses are classified as Continuing Education.

#### D. Non-Credit Community Education

Students pursuing non-credit, community education courses are classified as Non-Credit.

## Admission of Under Age 18 Students

### Guidelines:

No student under the age of 18 will be denied admission to the College because of age, lack of high school diploma or high school equivalency diploma, grade in school, lack of permission of school officials, or lack of concurrent enrollment in a public or private school, provided that the general parameters have been met to assess student preparedness. Admission to the College does not guarantee admission to a specific degree program or to all courses offered by the College.

Details of requirements for students under the age of 18 are identified in the previous section. For students under the age of 16, additional requirements to register for classes are specified below.

### Registration of Students Under Age 16

Pima Community College strives to provide quality instruction and



support for all students taking post-secondary level courses. In accordance with ARS15-1805.01 and ARS 15-1821, PCC has adopted an admissions policy for underage students. These students have the same rights and same responsibilities as any other college student, except as noted here and in applicable College policies. Because the student is a minor, each underage student and her/his parent/guardian are required to review and sign an agreement accepting responsibility for the decision to enroll.

**Underage admissions review process:** Until a student reaches the age of 16, a College Vice President of Student Development (VPSD) must review and approve the admission application each semester. The College may limit enrollment to no more than 2 courses or 8 credit hours based on a variety of factors. These factors include, but are not limited to: student academic performance, academic readiness, social and emotional readiness for college level engagement, the demands of the courses proposed, time constraints, etc. Continued enrollment will be based upon academic progress and course completion and is at the discretion of the VPSD or designee.

**Federal Financial Aid Eligibility:** Underage students are not eligible for federal financial aid until they complete high school, obtain a High School Equivalency Diploma, or become 18 years of age and are no longer in high school.

**Academic Freedom in College:** Course content and discussion are subject to faculty academic freedom and student rights of free speech. Topics may emerge which the student/parent may not consider age appropriate. If the student or parent is not comfortable with an assignment or classroom discussion, the faculty member is not required to substitute an alternate activity or graded exercise.

**Grading:** The grade received by the student is part of the student's permanent post-secondary academic record and may affect the student's eligibility for college scholarships or freshman/first-time status at other institutions of higher education.

**Student Support Services:** Although the student will have equal access to all academic support services offered to the student body, the College does not provide additional resources specifically for underage students. For more information, go to [www.pima.edu/current-students/advising/early-academic-alert.html](http://www.pima.edu/current-students/advising/early-academic-alert.html).

**FERPA:** The student's academic record (grades, registration information, progress, etc. in class) cannot be accessed by the parent without a written release, signed by the student. For more information, go to [www.pima.edu/current-students/code-of-conduct/ferpa/docs/FERPA-Release.pdf](http://www.pima.edu/current-students/code-of-conduct/ferpa/docs/FERPA-Release.pdf).

**Faculty communication:** The faculty member will provide standard updates on academic progress directly to the student. This may include graded homework, graded test papers, etc. In a college environment, attendance records are not provided as a measure of progress and faculty do not provide written or personal/telephone summaries during the semester.

## Admission of International Students

Admission for all international students is through the Center for International Education and Global Engagement located at the West Campus. For further information, call 520-206-6732 or visit [www.pima.edu/international](http://www.pima.edu/international).

1. International students intending to pursue full-time study must submit the following documents to the Center for International Education and Global Engagement to satisfy admission requirements. Necessary forms are available at the

Center for International Education and Global Engagement or online.

- a. A completed International Student Application Form verifying program of study, academic history and language proficiency information.
  - b. A completed Affidavit of Support, along with a bank statement or bank certification, verifying availability of funds in the amount required.
  - c. Proof of health insurance coverage. This requirement is met by enrolling in the student health insurance plan provided by PCC. Students who are under the sponsorship of their government or an agency that is responsible for their educational expenses, including medical coverage may waive the student health insurance plan provided by the College.
  - d. A copy of their passport showing validity for at least six (6) months.
  - e. All admissions requirements are pursuant to Title 8 of Code of Federal Regulations.
2. International student applicants must submit the following to satisfy admissions requirements in addition to those listed above (student who is applying for part-time admission and is in the United States on an active non-immigrant visa status that is not F-1 and eligible for study in the United States):
    - a. A completed International Student Application Form verifying program of study, academic history and language proficiency information.
    - b. A copy of the current I-94, either from the applicant's passport or the United States Department of Homeland Security website.
    - c. A copy of the visa page from the applicant's passport.

International student applicants under the age of 18 should be informed of the College's recommendation that they have a "guardian" in the United States to represent them in emergency situations since the College is not permitted to act in the place of the parent or guardian.

Once accepted, all international students must comply with the appropriate immigration standards and regulations.

Persons on other non-immigrant visas may be allowed to enroll in part-time course work in accordance with immigration policy.

## Border Commuter Students

In compliance with U.S. Citizenship and Immigration Services regulations, a border commuter student is a national of Canada or Mexico who is admitted to the United States as an F-1 nonimmigrant student to enroll in a full course of study, albeit on a part-time basis, in an approved school located within 75 miles of a United States land border. A border commuter student must maintain an actual residence and place of abode in the student's country of nationality, and seek admission to the United States at a land border port-of-entry.

Part-time border commuter students are not admitted for "duration of status," but rather "until a date certain." Regulations require the DSO to "specify a completion date on the Form I-20 that reflects the actual semester or term dates for the commuter student's current term of study," and issue a new Form I-20 "for each new semester or term that the commuter student attends at the school." The date-certain for which the students are admitted would be based on the end date of each I-20.



## Student Residency Requirements

For tuition purposes, students must indicate their residency status when applying for admission. Legal residency will be determined by the College before registration and payment of fees for any semester or session. Students will be notified of their residency status via their admission letter and their MyPima student portal. Review this information carefully before registering. If you believe it is incorrect, visit any campus Student Services Center for assistance. It is the student's responsibility to register under the correct residency status.

The process of determining residency is called domicile determination. Domicile is determined as of the first day of the session in which a student is enrolling. The guidelines to determine residency status are taken from the Arizona Revised Statute section 15-1801 through 15-1807. For questions about these guidelines, or for help determining residency status, please contact any campus Student Services Center.

### In-State Student Status (Section ARS 15-1802)

1. Except as otherwise provided in this article no person having a domicile elsewhere than in this state is eligible for classification as an in-state student for tuition purposes.
2. A person is not entitled to classification as an in-state student until the person is domiciled in this state for one year, unless the person meets one of the following requirements:
  - a. The person's parent's domicile is in this state and the parent is entitled to claim the person as an exemption for state and federal tax purposes.
  - b. The person is an employee of an employer which transferred the person to this state for employment purposes or the person is the spouse of such employee.
  - c. The person is an employee of a school district in this state and is under contract to teach on a full-time basis, or is employed as a full-time noncertified classroom aide at a school within that school district. For purposes of this paragraph, the person is eligible for classification as an in-state student only for courses necessary to complete the requirements for certification by the state board of education to teach in a school district in this state. No member of the person's family is eligible for classification as an in-state student if the person is eligible for classification as an in-state student pursuant to this paragraph.
  - d. The person's spouse has established domicile in this state for at least one year, has demonstrated intent and financial independence, and is entitled to claim the student as an exemption for state and federal tax purposes or the person's spouse was temporarily out-of-state for educational purposes, but maintained a domicile in this state. If the person is a non-citizen, the person must be in an eligible visa status pursuant to federal law to classify as an in-state student for tuition purposes.
3. The domicile of an unemancipated person is that of such person's parent.
4. Any unemancipated person who remains in this state when such person's parent, who had been domiciled in this state, removes from this state is entitled to classification as an in-state student until attainment of the degree for which currently enrolled, as long as such person maintains continuous attendance.
5. A person who is a member of the armed forces of the United States and who is stationed in this state pursuant to military orders, or who is the spouse or a dependent child as defined in section 43-1001 of a person who is a member of the armed forces of the United States and who is stationed in this state pursuant to military orders is entitled to classification as an in-state student. A spouse or a dependent child does not lose in-state student classification under this subsection if the spouse or dependent child qualifies for in-state tuition classification at the time the spouse or dependent child is accepted for admission to a community college under the jurisdiction of a community college district governing board or a university under the jurisdiction of the Arizona Board of Regents. The student, while in continuous attendance toward the degree for which currently enrolled, does not lose in-state student classification.
6. A person who is a member of the armed forces of the United States or the spouse or dependent as defined in section 43-1001 of a member of the armed forces of the United States is entitled to classification as an in-state student if the member of the armed forces has claimed this state as the person's state of legal residence for at least twelve consecutive months before the member of the armed forces, spouse or dependent enrolls in a university under the jurisdiction of the Arizona Board of Regents or a community college under the jurisdiction of a community college district governing board. For purposes of this subsection, the requirement that a person be domiciled in this state for one year before enrollment to qualify for in-state student classification does not apply.
7. A person who is honorably discharged from the armed forces of the United States shall be granted immediate classification as an in-state student on honorable discharge from the armed forces and, while in continuous attendance toward the degree for which currently enrolled, does not lose in-state student classification if the person has met the following requirements:
  1. Registered to vote in this state **and**
  2. Demonstrated objective evidence of intent to be a resident of Arizona which, for the purposes of this section, includes at least one of the following:
    - a. An Arizona driver's license
    - b. Arizona motor vehicle registration
    - c. Employment history in Arizona
    - d. Transfer of major banking services to Arizona
    - e. Change of permanent address on all pertinent records
    - f. Other materials of whatever kind or source relevant to domicile or residency status
8. A person who is a member of an Indian tribe recognized by the United States Department of the Interior whose reservation land lies in this state and extends into another state and who is a resident of the reservation is entitled to classification as an in-state student.

### Residency Determination and the Domicile/Residency Affidavit

Arizona residency requirements can be divided into three areas:

#### 1. Physical Presence

A person may be eligible for classification as a resident if that person can provide clear and convincing evidence of physical presence in the state of Arizona with the intent to establish a

domicile for 12 full months preceding the official start date of the semester of enrollment.

## 2. Intent to establish a domicile

Intent is measured by a variety of evidence, but the following may be required to provide clear and convincing evidence for establishing a domicile:

- a. Arizona driver's license
- b. Arizona motor vehicle registration
- c. Filing of Arizona state income taxes
- d. Filing of Federal tax forms as an Arizona resident
- e. Arizona voter registration
- f. Lease/Rental agreement
- g. Purchase of primary residence in Arizona
- h. Employment verification

## 3. Financial independence/dependence

A person applying for classification as a resident must prove financial independence from out-of-state parents, or dependence on in-state parents, for the entire domicile year. A person may be financial independent if:

- a. They were not claimed as a tax dependent by out-of-state parents for any portion of the domicile year;
- b. They did not receive more than one-half of their financial support from out-of-state parents during the domicile year;
- c. They were self-supporting for the entire domicile year; and/or
- d. Receiving financial aid, filed as an independent student, as defined per Federal financial aid guidelines.

A person may be financially dependent if:

- a. They were claimed as a tax dependent by an in-state resident parent for any portion of the domicile year;
- b. They received more than one-half of their financial support from in-state resident parents during the domicile year;
- c. They were not self-supporting for the entire domicile year; and/or
- d. They received financial aid as a dependent student, with in-state resident parents.

To petition for a change in your residency classification you must respond to all questions and statements on the Residency Correction Form and provide documentation supporting your request for residency change. You must:

- a. Complete a Residency Correction Form
- b. Provide proof that you resided in Arizona for at least one year prior to the start date of the semester for which you are applying, and
- c. Provide proof that you have taken steps to establish permanent residency in Arizona.

Failure to do so by the start date of the term in which you applied will be interpreted as evidence of not establishing residency in Arizona. As indicated by the Arizona residency regulations, the burden of proof that all requirements for residency classification have been met rests with the student. Clear and convincing evidence must be submitted by you to support all responses given on your petition.

All statements, information, and evidence provided on your petition must be consistent with other College/official documents. Inconsistencies may jeopardize your petition for residency and

subject you to disciplinary action, dismissal from the College, repayment of tuition, and repayment of financial aid.

Change in residency is not automatic. You must complete an affidavit and turn it in to a campus Student Services Center or the Office of Admissions.

## Verification of Lawful Presence

Since March 12, 2007, PCC students seeking in-state tuition have been required to complete a one-time Tuition Assessment Form/Verification of Lawful Presence Form. This enables the College to comply with state law.

All new and continuing students seeking in-state tuition and registering for credit classes, who have not previously had their lawful presence verified by the College, must complete the form and provide documentation. Once completed, you won't need to file again while at PCC.

You have 10 days from the date of admission to complete and submit the form. If you do not complete and submit the form within this time period a hold will be placed on your student account record. You will not be able to view your grades or receive a transcript until the form is processed. You must provide documentation to support your application. Acceptable documents are provided on the Tuition Assessment/Verification of Lawful Presence Form.

This form must be submitted in person if you are a resident of Pima County. Bring the form and required documentation to any campus Student Services Center or the Office of Admissions. Pima Community College requires the original signed form. Fax or scanned copies are not acceptable. The form is available at [www.pima.edu/new-students/apply/lawful-presence.html](http://www.pima.edu/new-students/apply/lawful-presence.html).

If you do not live in Pima County, call 520-206-4640 and a staff member will assist you.

## Assignment of Student Identification Number and Use of Social Security Number

Pima Community College assigns all new students a student identification number. PCC does not use your Social Security numbers for student identification numbers.

Pima Community College requests the Social Security numbers of all students who are U.S. citizens, Resident Aliens, or noncitizens (who have been issued a Social Security number) on the Application for Admission to match current and future records, ensuring that students receive full credit for all academic work. All local, state and federal student financial aid applications, and forms for College employment require student Social Security numbers.

**Note:** You must provide your Social Security number in the event the College is required by the Internal Revenue Service (IRS) to file a form 1098-T Tuition Statement.

## Before the First Semester

Student requirements for assessment, advising and orientation.

### Assessments

Depending on your application type, before you can register for courses, you may have to take the basic skills assessments in reading, writing and mathematics. If English is not your first language, take the Combined English Language Skills Assessment (CELSA).

As with any test or assessment, it is critical that you prepare in advance. The College provides a pre-placement activity that discusses the necessary information for you to prepare and practice for the assessments.

Once you have completed the pre-placement activity, visit any campus Assessment and Testing Center to take the assessments. You do not need an appointment, but do plan ahead and prepare to spend three or more hours taking the assessments. It is best if you can plan two days for testing, focusing on mathematics one day and reading and writing or the Combined English Language Skills Assessment on a separate day. Make sure to bring a photo ID with you.

### Special Accommodations

Special accommodations, such as extended time, large print, writing assistants and interpreters, are available for qualified disabled students through the Access and Disability Resources office. For more information, please refer to the Access and Disability Resources section.

### Other Testing Services

For students without a high school diploma, PCC offers the GED (General Education Development) test. This test is available at Pima Community College's Adult Basic Education for College and Career Centers. Additionally, the institutional TOEFL (Test of English as a Second Language) is available at the West Campus Assessment Center.

## Advising

Students are strongly encouraged to meet with an advisor or counselor on a regular basis, but not less than once per semester, to discuss short and long term academic goals, financial aid options, major and semester course planning, career planning, academic workload and life balancing.

### Advising Resources for Students

All students are urged to make use of MyDegreePlan, the College Catalog, the online class schedules, Student Success & Registration Guide, and the Student Handbook when selecting courses or developing an educational plan. These resources are available at all Student Services Centers or at [www.pima.edu](http://www.pima.edu). MyDegreePlan is available for all active students through their MyPima student account.

## Orientation

Orientation is designed to help students succeed in college, and is highly recommended. Orientation covers necessary information about programs, services, university transfer, study skills and registration. Each campus provides an orientation schedule for the upcoming semester. Orientations are offered at a variety of times, dates, and in many formats. All degree- and certificate-seeking students new to higher education are required to complete an orientation prior to registering for their first semester of credit courses. A student may, with the permission of an advisor or counselor, enroll in a designated Student Success course in place of attending an orientation. Visit [www.pima.edu/orientation](http://www.pima.edu/orientation) or contact any Student Services Center for more information.

## Declaring a Program of Study

Advising staff and counselors are available at all campuses and online to help you choose the right program of study, which may affect your financial aid or veterans educational benefits eligibility. Declaring a program of study will help you clarify your academic goals and will increase your likelihood of success.

## Transfer of Credits into PCC

Students who have taken classes at another college or university may transfer the credits to Pima Community College. The College may accept class credit (with a grade of C, its equal, or better) from colleges and universities accredited by any of the following regional accreditation commissions:

- Middle States Association of Colleges and Schools
- New England Association of Schools and Colleges, Inc.
- The Higher Learning Commission
- Northwest Commission on Schools, Colleges and Universities
- Southern Association of Colleges and Schools
- Western Association of Schools and Colleges

Pima Community College will also consider international transcripts that have been evaluated by the National Association of Credential Evaluation Services (NACES) or member agency of the American Association of Collegiate Registrars and Admissions Officers (AACRAO).

- To transfer credits to Pima Community College, the student must:
- Be admitted to Pima Community College



- Request an official transcript from the institution(s) previously attended be sent to PCC's Office of Enrollment Services/Registrar:  
4905B E. Broadway, Suite 220, Tucson, AZ 85709-1120.
- The student will be notified when the transcript has been received.
- Submit a Request for Transcript Evaluation Form for evaluation at any campus Student Services Center.

### Military Servicemembers Opportunity College

Pima Community College is an institutional member of Servicemembers Opportunity Colleges (SOC). The SOC is a group of more than 400 college and universities that willingly provide post-secondary (after high school) education to members of the military throughout the world. As a member of the SOC, the College recognizes the unique nature of the military lifestyle.

### General Education Mobile (GEM)

Pima Community College is a General Education Mobile (GEM) participating institution. GEM allows active-duty Air Force students to complete their 15-hour Community College of the Air Force (CCAF) General Education Course requirements online through Pima Community College and the General Education Mobile program (GEM) site. Courses are offered in five CCAF general education areas: Oral Communication, Written Communication, Mathematics, Social Sciences and Humanities. For more information, visit [www.pima.edu/new-students/apply/gem-program.html](http://www.pima.edu/new-students/apply/gem-program.html).

### Credit by Examination

Pima Community College realizes that when students enter the College, they may already have gained the knowledge and/or mastered the content of certain courses. Therefore, students have the opportunity to earn college credit by assessment of prior learning through examinations.

#### National Standardized Tests

Pass these national exams to earn equivalent college credit:

- Advanced Placement (AP)
- International Baccalaureate (IB)
- College-Level Examination Program (CLEP)

Credits earned through this process:

- may meet general education requirements - the display will indicate general education categories that the exam may fulfill
- may or may not transfer to other colleges or universities—exams are re-evaluated upon transfer to another institution so students planning to transfer should check with the transfer institution to determine if and how credits are awarded
- do not fulfill the requirement of completing 15 credits at PCC
- cannot be used in qualifying a student for veterans' education benefits
- are not eligible for financial assistance
- are awarded a grade of "TP" and will not be stated in terms of a specific course grade. No record is made of failing scores.

#### Special Examination for Credit – Challenge Exam

A challenge exam allows the student to take an examination for credit in a course where a student believes he/she has gained the same knowledge through some other experience (e.g., native language speaker or job experience). The process for Challenge Exams is under review and will be posted online when determined. Until

the new process is posted, contact the Dean for the course you wish to challenge.

### Advanced Placement (AP), International Baccalaureate (IB), and Cambridge International Exams (CIE) Programs

Pima Community College accepts many Advanced Placement (AP), International Baccalaureate Diploma (IB), and Cambridge International Exam credits. Taking AP, IB or CIE courses in select high school can accelerate a student's college career. At PCC, students can earn up to 30 credits toward a degree simply by taking examinations at the end of AP, IB, or CIE classes. Credits earned based on exam performance may be counted toward a certificate or degree, including General Education requirements. See the following AP and IB credit tables the CIE tables can be found online at <https://www.pima.edu/current-students/clep-tests/>. Contact a Pima Community College advisor to confirm course credit toward specific programs.

An effort has been made to match Pima Community College's AP, IB and CIE scores and equivalencies with those of the three state universities. For more information, visit the AZTransfer website [az-transfer.com/transfer\\_tools](http://az-transfer.com/transfer_tools).

Please refer to table on the next page for the required scores for course equivalencies and any General Education credit awarded. These scores are reviewed annually by the College Curriculum Office and by the respective discipline faculty.

#### College-Level Examination Program (CLEP) and DSST

The College-Level Examination Program and DSST offer a means by which students can obtain college credits without having to enroll formally in the courses. Pima Community College accepts certain CLEP and DSST for college credit, providing satisfactory scores are attained. Students must pay a registration service fee and an examination fee for each test. CLEP examinations are offered at PCC's Northwest Campus (520-206-2200) and the Davis- Monthan Air Force Base Education Center (520-206-4866), as well as the University of Arizona Testing Office (520-621-7589). Contact these offices to obtain information on the specific examinations offered.

In most cases an effort has been made to match Pima Community College's CLEP and DSST scores with those of the three state universities when those scores align. Otherwise PCC tries to match those at the University of Arizona.

CLEP and DSST credit may fulfill Arizona General Education Curriculum (AGEC) credit and/or Occupational General Education credit if the CLEP score results in credit given in a course in the General Education list. For example, a score of 50 on the "Western Civilization II: 1648 to Present" test results in HIS 102 credit that will fulfill AGEC and Occupational General Education requirements.

Passing scores for subjects credited through the CLEP and DSST are recorded with a "TP" grade and will not be stated in a specific course grade. No record is made of failing scores.

For CLEP, please refer to the table on the next page for the required scores for course equivalencies and any General Education credit awarded. For DSST, please refer to the online table at <https://www.pima.edu/current-students/clep-tests/>. These scores are reviewed annually by the College Curriculum Office and by the respective discipline faculty.

## Advanced Placement (AP)

## Advanced Placement (AP) Table

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>Art History</b>	4 or 5	Humanities and Fine Arts - Humanities	ART 130 & 131	6
	3	Humanities and Fine Arts - Humanities	ART 130 or 131	3
<b>Art: Studio Art–2D</b>	4 or 5	Humanities and Fine Arts—Art	ART 115	3
<b>Art: Studio Art–3D</b>	4 or 5	Humanities and Fine Arts—Art	ART 120	3
<b>Art: Studio Art-Drawing</b>	4 or 5	Humanities and Fine Arts—Art	ART 110	3
<b>Biology</b>	4 or 5	Biological and Physical Sciences	BIO 181IN & 182IN	8
	3	Biological and Physical Sciences	BIO 100IN	4
<b>Calculus</b>				
A/B exam	3, 4 or 5	Mathematics	MAT 220	5
B/C exam	4 or 5	Mathematics	MAT 220 & 231	9
B/C exam	3	Mathematics	MAT 220	5
<b>Chemistry</b>	5	Biological and Physical Sciences	CHM 151IN & 152IN	10
	4	Biological and Physical Sciences	CHM 151IN	5
<b>Chinese Language and Culture</b>	5	Other Requirements-Second Language	CHI 101, 102, 201 & 202	20
	4	Other Requirements-Second Language	CHI 101, 102 & 201	15
	3	Other Requirements-Second Language	CHI 101 & 102	10
<b>Computer Science A</b>	3, 4 or 5	None	CIS 131	5
<b>Economics</b>				
Macroeconomics	4 or 5	Social and Behavioral Sciences	ECN 202	3
Microeconomics	4 or 5	Social and Behavioral Sciences	ECN 201	3
<b>English</b>				
Language/Composition	4 or 5	English Composition	WRT 101	3
Literature	4 or 5	English Composition	WRT 101	3
<b>Environmental Science</b>	4 or 5	None	ZTR ELEC*	3
<b>European History</b>	4 or 5	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 101 & 102	6
<b>French Language and Culture</b>	5	Other Requirements—Second Language	FRE 101, 102, 201 & 202	16
	4	Other Requirements—Second Language	FRE 101, 102 & 201	12
	3	Other Requirements—Second Language	FRE 101 & 102	8
<b>German Language and Culture</b>	5	Other Requirements—Second Language	GER 101, 102, 201 & 202	16
	4	Other Requirements—Second Language	GER 101, 102 & 201	12
	3	Other Requirements—Second Language	GER 101 & 102	8
<b>Government &amp; Politics</b>				
Comparative	4 or 5	Social and Behavioral Sciences	POS 204	3
United States	4 or 5	Social and Behavioral Sciences	POS 201	3
<b>Human Geography</b>	4 or 5	Social and Behavioral Science	GEO 103	3
<b>Italian Language and Culture</b>	4 or 5	Other Requirements-Second Language	ITA 101, 102 & ZTR LA**	16
	3	Other Requirements-Second Language	ITA 101, 102	8
<b>Japanese Language and Culture</b>	5	Other Requirements-Second Language	JPN 101, 102, 201 & 202	20
	4	Other Requirements-Second Language	JPN 101, 102 & 201	15
	3	Other Requirements-Second Language	JPN 101 & 102	10
<b>Latin-Vergil</b>	3, 4 or 5	Other Requirements—Second Language	ZTR LA**	8
<b>Music Theory</b>	4 or 5	Humanities & Fine Arts - Fine Arts	MUS 125 & 127	5

### Advanced Placement (AP) Table *(continued)*

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>Physics</b>				
Physics 1 & 2 -	4 or 5	Biological and Physical Sciences	Under Review	5
Physics C - Electricity & Magnetism	3, 4 or 5	Biological and Physical Sciences	PHY 122IN	5
Physics C - Mechanics	3, 4 or 5	Biological and Physical Sciences	PHY 121IN	5
<b>Psychology</b>	4 or 5	Social and Behavioral Sciences	PSY 101	4
<b>Spanish Language</b>				
	5	Other Requirements—Second Language	SPA 101, 102, 201, 202 & 251	19
	4	Other Requirements—Second Language	SPA 101, 102, 201 202 & 251	19
	3	Other Requirements—Second Language	SPA 101, 102, 201 202	16
<b>Spanish Literature &amp; Culture</b>				
	4 or 5	Other Requirements—Second Language	SPA 101, 102, 201, 202 & 251	19
	3	Other Requirements—Second Language	SPA 101, 102, 201 & 202	16
<b>Statistics</b>	3, 4 or 5	Mathematics (AGEC-A only)	MAT 167	3
<b>U.S. History</b>	4 or 5	Social and Behavioral Sciences	HIS 141 & 142	6
<b>World History</b>				
	4 or 5	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	ZTR HU or ZTRSB***	6

\* ZTR ELEC awards credit as an elective applicable toward transfer degrees.

\*\* ZTR LA awards credit toward AGECE Other Requirements - Second Language

\*\*\* ZTR HU or ZTR SB awards credit toward either AGECE Humanities and Fine Arts - Humanities or AGECE Social and Behavioral Sciences. The default is Social and Behavioral Sciences.

### International Baccalaureate Diploma Programme (IB)

#### International Baccalaureate (IB) Table

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>American History (HL)</b>				
	5, 6 or 7	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 141 & 142	6
<b>Biology (HL)</b>				
	6 or 7	Biological and Physical Sciences	BIO 181IN & 182IN	8
	4 or 5	Biological and Physical Sciences	BIO 100IN	4
<b>Business and Management (HL)</b>	5, 6 or 7	None	ZTRELEC*	3
<b>Chemistry (HL)</b>				
	4 or 5	None	ZTR ELEC	
	6 or 7	Biological and Physical Sciences	CHM 151IN & 152IN	10
<b>Classical Languages: Latin (HL)</b>	4, 5, 6 or 7	Other Requirements - Second Language	ZTR LA**	8
<b>Computer Science (HL)</b>	5, 6 or 7	None	CIS 279	5
<b>East, Southeast Asian and Oceania History (HL)</b>				
	5, 6 or 7	None	ZTRELEC*	6
<b>Economics (HL)</b>	5, 6 or 7	Social and Behavioral Sciences	ECN 201 & 202	6
<b>English A (HL)</b>				
	5, 6 or 7	English Composition	WRT 101	3
	4	None	ZTRELEC*	3
<b>European History (HL)</b>				
	5, 6 or 7	Humanities and Fine Arts—Humanities OR Social and Behavioral Sciences	HIS 101 & 102	6
<b>Geography (HL)</b>	5, 6 or 7	Social and Behavioral Sciences	GEO 103	3
<b>Islamic History (HL)</b>	5, 6 or 7	Humanities and Fine Arts - Humanities	ZTR HU*	3
<b>Mathematics- Higher Level (HL)</b>	5, 6 or 7	Mathematics	MAT 220	5
<b>Modern Languages: French (HL)</b>				
	5, 6 or 7	Other Requirements - Second Language	FRE 201 & 202	8
	4	Other Requirements - Second Language	FRE 101 & 102	8
<b>Modern Languages: German (HL)</b>				
	5, 6 or 7	Other Requirements - Second Language	GER 201 & 202	8
	4	Other Requirements - Second Language	GER 101 & 102	8



Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>Modern Languages: Spanish (HL)</b>	5, 6 or 7	Other Requirements - Second Language	SPA 201 & 202	8
	4	Other Requirements - Second Language	SPA 101 & 102	8
<b>Music (HL)</b>	5, 6 or 7	Humanities and Fine Arts - Humanities OR Fine Arts	MUS 201 & 202	6
<b>Physics (HL)</b>	6 or 7	Biological and Physical Sciences	PHY 121IN & 122IN	10
	5	Biological and Physical Sciences	PHY 121IN	5
<b>Psychology (HL)</b>	5, 6 or 7	Social and Behavioral Sciences	PSY 101	4
<b>Social and Cultural Anthropology (HL)</b>	4	Social and Behavioral Sciences	ANT 102	3
<b>Theatre (HL)</b>	4, 5, 6 or 7	Humanities and Fine Arts - Fine Art	THE 105	3
<b>Visual Arts (HL)</b>	5, 6 or 7	Humanities and Fine Arts - Fine Arts	ART 110 & ART 115	3
	4	Humanities and Fine Arts - Fine Arts	ART 115	3

\* ZTR ELEC awards credit as an elective applicable toward transfer degree

\*\* ZTR LA awards credit toward AGEC Other Requirements - Second Language

\*\*\*ZTR HU awards credit toward AGEC Humanities and Fine Arts - Humanities

### College-Level Examination Program (CLEP)

#### College-Level Examination Program (CLEP) – Subject Exams

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>American Government</b>	50	Social and Behavioral Science	POS 201	3
<b>American Literature</b>	55	Humanities and Fine Arts - Humanities	ZTR HU*	3
<b>Analyzing and Interpreting Literature</b>	50	Humanities and Fine Arts - Humanities	ZTR HU*	3
<b>Biology</b>	50	None	ZTR ELEC**	3
<b>Calculus</b>	50	Mathematics	MAT 220	5
<b>Chemistry</b>	50	Biological and Physical Sciences	CHM 151IN	5
<b>College Algebra</b>	50	Mathematics (AGEC-A only)	MAT 151	4
<b>College Composition</b>	50	English Composition	WRT 101	3
<b>English Literature</b>	55	Humanities and Fine Arts - Humanities	ZTR HU*	3
<b>Financial Accounting</b>	50	None	ZTR ELEC**	3
<b>French Language</b>	66	Other Requirements—Second Language	FRE 101, 102, 201 & 202	16
	62	Other Requirements—Second Language	FRE 101, 102 & 201	12
	55	Other Requirements—Second Language	FRE 101 & 102	8
	50	Other Requirements—Second Language	FRE 101	4
<b>German Language</b>	60	Other Requirements—Second Language	GER 101, 102, 201 & 202	16
	51	Other Requirements—Second Language	GER 101, 102 & 201	12
	46	Other Requirements—Second Language	GER 101 & 102	8
	39	Other Requirements—Second Language	GER 101	4
<b>History of the United States I: Early Colonization to 1877</b>	56	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 141	3
<b>History of the United States II: 1865 to Present:</b>	56	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 142	3
<b>Human Growth &amp; Development</b>	50	None	ZTR ELEC**	3
<b>Information Systems</b>		Under Review		
<b>Introductory Business Law</b>	50	None	ZTR ELEC**	3

**College-Level Examination Program (CLEP) – Subject Exams** *(continued)*

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>Introductory Psychology</b>	50	Social and Behavioral Science	PSY 101	4
<b>Introductory Sociology</b>	50	Social and Behavioral Science	SOC 101	3
<b>Natural Sciences</b>	56	None	ZTR ELEC**	6
	53	None	ZTR ELEC**	3
<b>Precalculus</b>	50	Mathematics (AGEC-A Only)	MAT 189	3
<b>Principles of Macroeconomics</b>	50	Social and Behavioral Science	ECN 202	3
<b>Principles of Management</b>	50	None	MGT 000	departmental elective credit
<b>Principles of Marketing</b>	50	None	ZTR ELEC**	3
<b>Principles of Microeconomics</b>	50	Social and Behavioral Science	ECN 201	3
<b>Social Sciences and History</b>	50	Social and Behavioral Science	ZTR SB***	3
<b>Spanish Language</b>	68	Other Requirements—Second Language	SPA 101, 102, 201 & 202	16
	66	Other Requirements—Second Language	SPA 101, 102 & 201	12
	55	Other Requirements—Second Language	SPA 101 & 102	8
	50	Other Requirements—Second Language	SPA 101	4
<b>Western Civilization I: Ancient Near East to 1648</b>	56	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 101	3
<b>Western Civilization II: 1648 to the Present</b>	56	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 102	3

ZTR HU awards credit toward AGECE Humanities and Fine Arts - Humanities.

\*\* ZTR ELEC awards credit as an elective applicable toward transfer degrees.

\*\*\* ZTR SB awards credit toward AGECE Social and Behavioral Services.

## Enrolling in Classes

Each semester the College publishes a Student Success & Registration Guide that provides instructions on when and how to register, information on financial aid, advising, student resources, and important dates and deadlines for the upcoming semester or sessions. This guide is available at all campus Student Services Centers and online. A list of classes offered, with the dates, times and locations of each course is available online.

### There are two ways to register for classes:

- MyPima online registration
- Walk-in registration at all campus Student Services Centers

Students can audit most credit classes with the instructor's permission. Auditing a class means that you enroll, pay for, attend and do work for the class but do not receive credit or a grade. Audit registration must be conducted in person at any campus or district admissions office between the first day of class and the drop/refund deadline for the class. Once you begin a course for credit, you cannot change to audit status.

Student enrollment is not official for any academic term until all tuition and fees are paid.

### For more information:

- See the PCC website at [www.pima.edu](http://www.pima.edu)
- Contact any campus Student Services Center or call the general information line (520-206-4500)

## Maximum Credit Hours Per Semester

To promote student success and retention, the College limits the number of credits in which a student can enroll each term. Students can enroll in a maximum of 18 credit hours in the fall and spring semesters and 12 credit hours in summer sessions. Enrollment beyond these limits requires approval from a Vice President of Student Development or designee. Students are encouraged to meet with an advisor to discuss the appropriate maximum number of credits for their individual circumstances. Credits or coursework taken concurrently outside of Pima Community College should be taken into consideration. For more information, please contact any campus Student Services Center.

## Course Prerequisites

Students must meet course prerequisites as stated in this catalog and class schedules, or demonstrate to the instructor their ability to take the class. If the student does not have the proper prerequisite(s) for the class the student will not be allowed to register for the class or, if the prerequisite was not successfully completed, the student may be dropped from the class.

## Important Student Information

### Student Rights and Responsibilities

All PCC students are considered to be responsible individuals and are accountable for their own behavior. The College expects all students to obey local, state and federal laws, and to follow the College's Student Code of Conduct. Those standards, as well as the student complaint process, are explained online under Student Rights and Responsibilities at [www.pima.edu/studenterv/studentcode](http://www.pima.edu/studenterv/studentcode).

### If You Have a Problem

Students with general complaints should see the campus Vice President of Instruction or Vice President of Student Development for guidance in resolving problems. Student Rights and Responsibilities regarding procedures for appealing grades or code of conduct penalties can be found online at [www.pima.edu](http://www.pima.edu).

### Religious Observances

Pima Community College accommodates the religious observances and practices of students unless it will result in undue hardship to College programs. Arrangements should be made with the instructor at least two weeks in advance.

### Family Educational Rights and Privacy Act (FERPA)

FERPA is the Family Education Rights and Privacy Act of 1974 that requires students to provide written permission for release of their grades and other information. This act was designed to protect the privacy of educational records, to establish the right of students to inspect and review their educational records, and to provide guidelines for correcting inaccurate or misleading data through informal or formal hearings.

When a student turns 18 or enters PCC at any age, all rights afforded to parents under FERPA transfer to the student. However, FERPA also allows PCC to share information with parents without the student's consent. For example PCC may:

- Disclose education records to parents if the student is a dependent for income tax purposes. However, disclosure is at the discretion of the Registrar and the request must be based on a legitimate educational interest;

- Disclose education records to parents if a health or safety emergency involves their child;

- Inform parents if their student (who is younger than 21) has violated any law or its policy concerning the use or possession of alcohol or a controlled substance;

- Share information that is based on an official's personal knowledge or observation of the student.

### FERPA and Emergencies

FERPA permits PCC officials to disclose education records without student consent in an emergency, including personally identifiable information from those records, to protect the health and safety of students or other individuals. At such times, records and information may be released to appropriate parties such as law enforcement or public health officials, and trained medical personnel. This

exception to FERPA's general consent rule is limited to the period of the emergency and generally does not allow for a blanket release of personally identifiable information from a student's education records.

### FERPA and Disciplinary Records

While student disciplinary records are protected as education records under FERPA, there are certain circumstances in which disciplinary records may be disclosed without the student's consent. PCC may disclose to an alleged victim of any crime of violence or non-forcible sex offense the final results of a disciplinary proceeding conducted by PCC against the alleged perpetrator of that crime, regardless of whether the institution concluded a violation was committed. PCC may disclose to anyone – not just the victim – the final results of a disciplinary proceeding, if it determines that the student is an alleged perpetrator of a crime of violence or non-forcible sex offense, and with respect to the allegation made against him or her, the student has committed a violation of PCC rules or policies.

### FERPA and Student and Exchange Visitor Information System (SEVIS)

FERPA permits PCC to comply with information requests from the U.S. Department of Homeland Security (DHS) and its Immigration and Customs Enforcement Bureau (ICE) in order to comply with the requirements of SEVIS. Officials who have specific questions about this and other matters involving international students should contact the U.S. Department of Education's Family Policy Compliance Office.

### FERPA and Transfer of Education Records

FERPA permits PCC officials to disclose any and all education records, including disciplinary records, to another institution at which the student seeks or intends to enroll. While student consent is not required for transferring education records, PCC's annual FERPA notification should indicate that such disclosures are made. In the absence of information about disclosures in the annual FERPA notification, PCC officials must make a reasonable attempt to notify the student about the disclosure, unless the student initiates the disclosure.

### FERPA and Directory Information

The College may disclose directory information without prior written consent, unless notified by the student in writing by the first official class meeting date of each semester.

Directory information includes:

- Student name
- Major field of study
- Participation in officially recognized activities and sports
- Dates of attendance
- Degrees and awards received
- Most recent educational institution attended
- Enrollment status (i.e. full-time, three-quarter-time, half-time, less than half-time, withdrawn, graduated or deceased)

For more information about FERPA policies and procedures, students can login to MyPima.

### FERPA Contact

Director of Enrollment Services/Registrar  
520-206-4625



## Family Policy Compliance Office

U.S. Department of Education  
400 Maryland Ave. S.W.  
Washington, D.C. 20202-5920  
202-260-3887

## Academic Reporting

Throughout the United States, colleges and universities monitor the progress students make in achieving their academic goals. PCC is pleased to provide information regarding our institution's graduation/completion and transfer rates, in compliance with the Higher Education Act of 1965, as amended. Student success information, including information about student-athletes, is available online at [www.pima.edu](http://www.pima.edu), or call 520-206-4500 and ask to receive a copy of the Student Right to Know brochure.

## Academic Policies: Grades, Academic Progress and Student Classification

### Grading Policies

Grades at Pima Community College are recorded at the end of each session according to the following system:

- A** – Superior = 4 grade points per credit hour
- B** – Above Average = 3 grade points per credit hour
- C** – Average = 2 grade points per credit hour
- D** – Below Average = 1 grade point per credit hour
- F** – Failure = 0 grade point per credit hour
- P** – Pass = "C" or better without grade differentiation ordinarily indicated by the College grading system. A "D" grade may be given at the student's request and the instructor's option.
- I** – Incomplete: A record of Incomplete as a grade will be made at the student's request and the instructor's option. A student receiving a grade of "I" will be provided with a standard form specifying the work necessary for completion of the course. After the student completes the work, or after the "I" deadline set by the instructor, the instructor submits a Change of Grade form to the campus Student Services Center. If no Change of Grade form is submitted within a year, the "I" will be automatically changed to "F."
- IP** – Work in progress in open entry/open exit course. A record of "IP" (in progress) as a grade will be made when a student is making satisfactory progress in a course that crosses sections in start and end dates. At the specified end date of the course, the student will be assigned a grade of "A," "B," "C," "D," "F," "I," "P," or "W."
- W** – Withdrawal: This grade may be requested by the student only during the first two-thirds of any session. This grade may also be given at the discretion of the instructor on or before the final grading date for the class. The "W" withdrawal grade is initiated in one of two ways:
  - a. By the student after the drop deadline and on or before the 67 percent point of the term which is the official withdrawal date, or
  - b. At the discretion of the faculty. This grade is not included in the grade point average computation. This grade will impact the completion rate and will be recorded on a student's transcript. The last date that a student is engaged in an academically related activity will be recorded in conjunction with this grade.
- X** – Credit by Exam: An "X" placed next to the grade indicates the grade was earned through the successful completion of a proficiency test.
- AU** – Audit: To audit a class means to enroll in and to attend a class without working for or expecting to receive credit. The symbol for audit, "AU," appears on the academic transcript and on the class enrollment list by the student's name. Students auditing a class must register by the end of the official refund period and must receive the written permission of the instructor.
- NA** – Never Attended: "NA" indicates that a student was registered for the course, but never engaged in the course by the drop deadline. This grade will have the effect of dropping the student from the course and causing a recalculation of the students' enrolled credit hours. This grade is not included in the grade point average or completion rate computations nor will it be recorded on a student's transcript.

### Grade Point Average (GPA) Calculation

The GPA is figured by multiplying the number of credit hours for each class by the number of points for the grade given and dividing the sum of the points by the total number of credit hours of "A," "B," "C," "D" and "F" grades. The GPA is based only on work completed at Pima Community College. A complete record of all credit courses attempted at the College is kept for each student.

### Grade Reports

Grades are viewable on the student's MyPima Academics tab. Grade reports or mailers are not mailed.

### Appeal of Grades

To challenge a grade, a student must do so through a formal process. Please refer to [www.pima.edu/current-students/complaint-process-es/grade-related-complaints.html](http://www.pima.edu/current-students/complaint-process-es/grade-related-complaints.html).

### Course Repeat Grades

The higher of two grades earned for the same class will be used to figure the GPA. The higher of the two grades will be included (I) and the other will be excluded (E). Both courses will appear on the student's transcript (special courses that are repeated more than twice may not fall under this guideline.) See a counselor for additional information.

## Clock Hour Grading Policy

Grades for Clock Hour programs at Pima Community College are recorded at the end of each module according to the following system:

- F** – Failure = failed clock hour module with less than 80%; without grade differentiation ordinarily indicated by the College grading system.

- P** – Pass = 80% or better without grade differentiation ordinarily indicated by the College grading system.
- W** – Withdrawal: This grade may be requested by the student only during the first two-thirds of any module. This grade may also be given at the discretion of the instructor on or before the final grading date for the module. The “W” withdrawal grade is initiated in one of two ways:
- By the student after the drop deadline and on or before the 67 percent point of the term which is the official withdrawal date, or
  - At the discretion of the faculty. The last date that a student is engaged in an academically related activity will be recorded in conjunction with this grade.
- IP** – In Progress: This grade is used for incomplete module work that must be moved from one academic year to the next.

## Standards of Academic Progress for Credit Students

### Good Academic Standing

To have Good Academic Standing, you must complete the minimum academic requirements. Students who maintain a cumulative grade point average (GPA) of 2.0 and have a completion rate of 67 percent remain in good academic standing. Completion rates are calculated by dividing the number of credits a student attempts by the number of credits they have completed. Withdrawals and re-takes are included in this calculation. Satisfactory Academic Progress will be assessed by the institution at the end of each semester.

### Academic Warning

The first semester a student falls below a 2.0 GPA and/or 67 percent completion rate, the student will be placed on Academic Warning. When placed on Academic Warning, the student will have a hold placed on the student account and will need to attend a RISE Workshop. This hold prevents students from being able to make changes or register for classes. Veteran Benefit Recipients (VBRs) are eligible to use VA benefits while on Warning.

### Academic Probation

Any student on Academic Warning whose GPA remains below 2.0 and/or 67 percent completion rate, will be placed on Academic Probation. When placed on Academic Probation, the student will have a hold placed on the student account and must meet with a counselor to develop a plan for academic improvement. This hold prevents the student from being able to make changes or register for classes. VBR's must meet with their veteran advisor. VBR's are eligible to use VA benefits while on Probation.

### Academic Restriction

In any subsequent semester following Academic Probation where the GPA remains below 2.0, the student will be placed on Academic Restriction. A hold will remain on the student's record and the student will need to meet with a counselor to develop a plan for academic improvement.

During Academic Restriction, students are limited in the total amount of credit hours they are allowed to take per semester until they've achieved a semester GPA of 2.0 or higher.

Full-year programs and selective programs require faculty approval.

The restriction of credit hours does not apply to Veteran Benefit Recipients, International or Athletic students.

For Veteran Benefit Recipients (VBR), Academic Restriction is replaced with Suspension of VA Educational Benefits for at least one semester or until SAP is met.

### Veteran Benefit Recipient (VBR) Standards of Academic Progress (SAP) Appeals:

- If you failed to maintain Academic Good Standing due to unforeseeable extenuating circumstances you may appeal your loss of VA benefit eligibility. For further information see the Satisfactory Academic Progress Appeal Information/Form.
- Students have a right to appeal their SAP status through the Military and Veteran Services Appeal Committee.
- If your SAP appeal is denied you can only re-appeal if you have extenuating circumstances and/or documentation that you did not include with your initial appeal submission. Only one appeal is permitted for the same semester the student has not met SAP
- All students who submit an appeal must meet with their Veteran Advisor to develop an academic plan and agree to adhere to all associated requirements.
- If your appeal has been approved, you must adhere to the associated academic plan during any semester you are on SAP probation. Your probation will continue to be extended as long as significant academic progress continues or until you are back in good academic standing.
- Students are eligible to use Veterans Educational Benefits during the extended Probation period.
- Students with an approved appeal will remain on SAP probation until they achieve good academic standing provided they make significant academic progress each semester. Failure to show academic progress will result in suspension of Veteran Educational Benefits.
- If a student has not met Satisfactory Academic Progress and/or their appeal has been denied, their eligibility to use Veteran Educational Benefits will be suspended for all subsequent classes. If the appeal is approved the courses will be retroactively certified.
- The Veteran Services Office will review the student's progress at the end of the probationary semester to determine if the terms of the academic plan have been met.
- If a student leaves PCC on probation and returns they will remain on probation until Satisfactory Academic Progress has been met or eligibility is suspended.
- The committee's decision is final and may not be appealed because the student disagrees with the decision.

### Veteran Benefit Recipient (VBR) Academic Improvement Plan Requirements:

In order for Veterans Educational Benefits to be reinstated after suspension, the student must provide to their veteran advisor:

- A statement describing actions taken to ensure Satisfactory Academic Progress
- A comprehensive degree plan that is strictly adhered to to ensure success
- Student may not change their program of study without the consent and counsel of their assigned veteran advisor.

- Veteran Educational Benefits will be suspended if the student does not adhere to the Academic Improvement Plan and does not meet SAP Standards.

### Academic Fresh Start Program

The Academic Fresh Start program allows a one-time forgiveness of up to 30 failed credits (grades of "D" or "F" only), from no more than four academic semesters. To be considered eligible, students must have completed their courses at least three years prior to the submission of the request. All grades representing the student's academic history will remain on the student's academic record (transcript). All academic Fresh Start approved courses will be excluded from the calculation of the grade point average (GPA). Academic Fresh Start does not change the status of a previously earned degree or certificate.

Since the student's complete record of academic history (before and after Academic Fresh Start) remains on the transcript, other institutions may consider all classes when a student transfers or applies to a professional or graduate-level program.

For additional information, the student should see a PCC counselor. ***VBR's must consult with their veteran advisor prior to applying for Fresh Start.***

## Satisfactory Academic Progress for CTD Clock Hour Students Good Academic Standing

- Students are in good academic standing if they have a cumulative Grade Point Average (GPA) of 2.0 from prior credit courses taken at Pima Community College and 80% or higher course grading in each of their clock hour modules. (Students earning a grade of "P" in program modules have demonstrated at least 80% or higher competency for that module. Students will not move forward in their course module if they do not meet the 80% requirement in grade or attendance.)
- If students fail to achieve Good Academic Standing, they will be placed on Academic Warning, indicating a serious institutional concern about their academic progress.

### Frequency of Evaluation

- For Veterans Benefits Recipient (VBR) students in a clock hour program, Standards of Academic Progress (SAP) will be evaluated via Individual Progress Reports (IPRs) at the following three (3) intervals:
  - When the student has attended 25% of their scheduled clock hours, and
  - When the student has attended 50% of their scheduled clock hours, and
  - When the student has attended 75% of their scheduled clock hours.
- VBR students requesting a Leave of Absence (LOA) will receive a withdrawal effective the last date of attendance. This could potentially create a debt with the VA unless documentation of mitigating circumstances are submitted to their Veteran Advisor or directly to the VA (in an attempt to avoid a debt).
- If a student on Academic Warning regains Good Academic Standing by their next SAP review, the student will be removed from Academic Warning.
- Students on Academic Warning who do not regain Good

Academic Standing will be placed on Academic Suspension and be ineligible for VA benefits for a minimum of 90 days.

### Academic Warning

- At the indicated evaluation periods, SAP will be run and academic progress will be evaluated using an IPR. Students who are not in Good Academic Standing will be placed on Academic Warning.
- Students may still use Veterans Education Benefits while on Academic Warning.
- When placed on Academic Warning students will be sent an email through their official Pima email address.
- Students must meet with a counselor, CTD advisor, and Military and Veteran Services advisor for further academic support and needs.
- Students must have an immediate IPR meeting to set up a plan for success. This meeting will include the student, the program coordinator, faculty/instructor and student services personnel.
- Academic Warning continues until the student is reevaluated after attending an additional 25% of scheduled clock hours (based on the frequency of evaluation for VBR students).
- At the next SAP review, academic progress is evaluated using the program IPR to determine if the student has returned to a good academic standing or academic suspension.

### Academic Suspension

- If students on Academic Warning have not achieved Good Academic Standing at the point of the next SAP review, they will be put on Academic Suspension for 90 days and will not be eligible to continue using VA Educational Benefits during that time.
- If Academically Suspended, students using Veteran Education Benefits will have their VA certifications terminated effective the date of their final IPR review or based on their Last Day of Attendance.
- Students that are Academically Suspended may continue the program at their own cost.
- After 90 days, the student may resume using VA benefits.
- Upon return, students will be placed on an Academic Warning status until they regain Good Academic standing.

### Appeals

- Students who want to appeal their Academic Suspension must meet with a Military and Veterans Services Advisor. The final decision for suspension of appeal resides within the Military and Veteran Services Coordinators.

### Readmission

- Clock hour students who are academically disqualified and want to return to the program, must sit out a minimum of 90 days, demonstrate that they meet all selective admissions standards and be approved for readmission by the Program Coordinator and CTD Director.

## Financial Aid Academic Standing

Students receiving financial aid have additional and separate policies and requirements regarding their Academic Standing. Information is available at [www.pima.edu/paying-for-school/financial-aid/satisfactory-progress/index.html](http://www.pima.edu/paying-for-school/financial-aid/satisfactory-progress/index.html).



## Satisfactory Academic Progress for International Students

The U.S. Immigration and Customs Enforcement/U.S. Department of Homeland Security require schools to have and enforce standards of academic progress for international students. The law requires that an I-20 Form and the accompanying F-1 visa be terminated when a student ceases to make satisfactory progress toward completion of their educational objectives.

PCC international students will have their academic standing monitored under the following guidelines. International students must understand that these requirements are in addition to, and are more restrictive than, the College's Standards of Academic Progress (SAP), much like the separate requirements for financial aid and Veteran's Benefits recipients. If a student has uncontrollable, unpredictable, extenuating circumstances that prevented successful course completion, he/she should discuss their situation with a PCC International Student Advisor.

1. All international students must maintain a grade point average of 2.0 or greater and complete at least 12 credits each semester and/or 24 credits per academic year. Satisfactory academic progress will be reviewed at the end of every semester. Withdrawals, incomplete grades and repeated classes are considered attempted classes. Repeated courses with a grade that is the same or lower than a prior attempt are considered attempted but not completed credit.
2. An international student will be placed on an International Warning when their grade point average falls below 2.0 and/or fails to complete 12 credits for that semester. An international student placed on warning will have one semester of enrollment to bring their grade point average to 2.0 or above and maintain 12 or more credits. An international student on warning will be:
  - a. Notified via PCC email of being placed on warning and registration being blocked.
  - b. Required to meet with an International Student Advisor to develop a Learning Agreement.
3. If the international student fails to maintain a 2.0 GPA and/or complete at least 12 credits within one semester of enrollment, they will be placed on International Probation. A student on probation will be:
  - a. Notified via PCC email of being placed on probation and registration being blocked.
  - b. Required to meet with an International Student Advisor to develop an Academic Improvement Plan and successful completion. Students must adhere to the agreed upon plan during any semester(s) when they are on probation. The Center for International Education and Global Engagement will review the student's progress at the end of the probationary semester to determine if the terms of the academic plan have been met. Registration will be completed by the advisor after the meeting.
  - c. Required to complete an Academic Probation Workshop or STU 100, 102, 121 or 150 course found in the online class schedule. If the student chooses the workshop instead of an STU course, they must also bring the Academic Probation Workshop materials with them to earn the full credit.
4. An international student placed on probation will have one semester of enrollment to bring their grade point average

to 2.0 or above, complete at least 12 credits and the courses determined in their Academic Improvement Plan or they will be placed on International Disqualification. A student on disqualification will:

- a. Be notified via PCC email of being placed on Disqualification;
  - b. No longer be eligible to be enrolled in classes at PCC.
5. An international student has the right to appeal his/her disqualification within 15 days of notification.
- a. If an appeal is not submitted by the student, their I-20 will be terminated and they will have to immediately leave the United States as immigration regulations provide no grace period for being suspended.

### Steps for submitting an International Disqualification Appeal:

**Step 1:** Submit a typed and signed personal statement explaining the circumstances contributing to your inability to maintain Satisfactory Academic Progress. You must address all unsuccessful courses and how your circumstances have changed. In addition, if you have completed more courses than those required for your program, you must also explain the reasons why you did not graduate in a reasonable timeframe.

Documented extenuating circumstances might include, but are not limited to:

- Student's major illness or injury
- Major illness or injury in the student's immediate family
- Student's spouse's major illness or injury
- Student's parent's loss of employment
- Student's spouse's loss of employment
- Student's separation or divorce
- Student's parent's separation or divorce
- Death in the student's immediate family
- Death of student's spouse
- Natural disaster affecting the student
- Natural disaster affecting the student's parent(s)
- Natural disaster affecting the student's spouse
- Describe what has changed and your plan for making satisfactory progress.

### Step 2: Provide Documentation

It is extremely important that you include documentation to support your statement.

Examples:

- Letters from health providers
- Copies of medical bills showing health provider visits

If the circumstances that contributed to your inability to maintain Satisfactory Academic Progress were medical in nature, you may also wish to work with your physician to complete the Evaluation Questionnaire for Physician/Health Care Provider Form and submit this with your completed appeal packet.

Any other statements or documentation to support your extenuating circumstance that prevented you from making satisfactory progress.

Your appeal will be denied by the committee if documentation is not provided.

**Step 3:** Make an appointment with an International Student Advisor to review and/or update your planner in MyDegreePlan. Contact the Center for International Education and Global Engagement at the West Campus to schedule an appointment.

1. For your appointment you must bring the following:
2. Typed and signed personal statement of what prevented you from being successful during the previous semester.
3. Supporting documentation.
4. A print out of the degree requirements for your Program of Study (POS).

**Step 4:** Submit appeal packet to the Associate Director, International Admission, Compliance and Operations at the West Campus Center for International Education and Global Engagement

**Step 5:** Await Decision

Appeals are reviewed by the Center for International Education and Global Engagement team. You will be informed of the committee's decision through your PCC email account. The committee's decision is final.

## Student Classification and Standing

Pima Community College students will be classified using the following criteria:

### Full-Time Student

Students enrolled for 12 or more credit hours for the fall or spring semester, six or more credit hours for a 10-week summer session, or four or more credit hours for a five-week summer session will be classified as full-time students.

**Note:** For financial aid purposes, summer session students must enroll for a total of 12 hours in one or any combination of the established summer sessions to be considered full-time students.

### Part-Time Student

Students enrolled for one to 11 credit hours during the fall or spring semester, five or fewer credit hours for a 10-week summer session, or three or fewer credit hours for a five-week summer session will be classified as part-time students.

### Freshman

Students who have earned fewer than 28 semester hours of credit will be considered freshmen.

### Sophomore

Students who have earned 28 or more semester hours of credit will be considered sophomores.

## General Attendance Policy

### Class Attendance and Participation

PCC recognizes that attending college, whether you are a new or continuing student, can be both exciting and challenging. However, your regular attendance and active participation contribute not only to your academic success and standing but may have a significant impact on your ability to receive Federal Financial Aid and Veterans Benefits.

### Tracking Attendance and/or Participation in Credit Classes

The College tracks credit class attendance and notifies students if their attendance record might jeopardize their success, aid and/or benefits. The College must make adjustments in Veterans Benefits and Federal Financial Aid when a student drops a class and/or when a student no longer attends or actively participates. These adjustments may result in students owing funds to the College, the U.S. Department of Education, and/or the Veterans Administration.

#### What you need to know:

- Prior to the drop deadline, you must attend and/or actively participate in your class(es). The drop date can be found in your syllabus. If you do not attend and/or actively participate by the drop deadline, your instructor will enter NA, Never Attended, on the roster and the registration will be dropped for that class. A refund will be issued.
- After the drop deadline, if you are registered but not attending and/or actively participating for 14 days, your status will be changed to RN, Registered – Not Attending, for the class and you may be issued a withdrawal by the instructor. You will receive a notification from the College indicating that you are in an RN registration status.
- Failure to complete courses for which you register, and/or receiving withdrawal or failing grades, will impact your academic standing with the College.

#### What can you do:

- See your syllabus and/or contact your instructor to find out how attendance and/or active participation are defined for your class(es).
- Contact your instructor if you have to miss a class.
- If you receive an RN notification and plan to continue in the class:
  - check the attendance policy for your class and see your instructor
  - return to class and/or resume active participation
- If you receive an RN notification and do not plan to continue in the class, contact an advisor or counselor about withdrawing from the class.
- If you have questions about your aid or benefits, contact the Financial Aid Office at 520-206-4950 or fahelp@pima.edu or contact your assigned Veterans advisor found in the Veterans tab of MyPima.
- Contact a campus Student Services Center for further information about registration statuses, attendance, withdrawing and/or academic success resources.

# Center for Training and Development (CTD) Attendance Policy

## Preface

These procedures are for the Center for Training and Development (CTD) clock-hour certificate programs only. Credit programs follow the standard PCC systems.

## Clock-hour Department Titles:

The divisions within CTD are

- **Business Technology**
  - Accounting
  - Computer/IT
  - General Office
  - Legal Office
  - Medical Office
- **Culinary and Food Service**
  - Baking & Pastry
  - Cooking
- **Nursing Professions**
  - Nursing Assistant
  - Practical Nursing
  - RN and LPN Refresher
- **Health Occupations**
  - Patient Care Technician
  - Surgical Technology

## Documents used as part of this process:

- Student Attendance Sheet
- Student Leave of Absence Forms
- Individual Progress Reports

## Student Attendance Procedure

1. All student attendance is captured utilizing the student attendance spreadsheet. This form that calculates hours offered, hours attended, and hours absent. It also records leaves of absence and scheduled days off.
  - 1.1. Leave of Absence is defined as a period that students remain enrolled with a program but are not in training. The duration of a leave of absence is established by Federal Financial Aid guidelines.
    - 1.1.1. Students on federal financial aid must follow the federal aid guidelines. No exceptions are allowed.
    - 1.1.2. Students not on financial aid still follow the established guidelines; however, additional time or leaves of absence may be granted by the CTD Director with documented evidence of both extreme circumstances and that the additional time or opportunity most likely will help to resolve the extreme circumstances.
  - 1.2. Scheduled Days Off is defined as a day or days in which education is not offered to the student or groups of students. These are established by PCC's Academic Calendar, the students course schedule, and by the CTD Director. The total continuous scheduled days off cannot exceed two weeks unless the College is closed for a duration longer than two weeks which is a decision established by the Chancellor, Campus President, and possibly the Governing Board.

2. Attendance is gathered daily through timesheets, timecards, online tracking, and similar systems. The official record is the Student Attendance Sheet.
3. Weekly attendance is reported to Financial Aid for those students receiving financial aid.
4. Monthly attendance is reported to agencies sponsoring students.
5. Attendance is one of the items monitored for student progress, success, and completion. It is also for FTSE reporting purposes.

## Scheduled Days Off

1. Established by the College's Academic Calendar, student course schedule, and/or CTD Director.
  - 1.1. Scheduled Days Off reflect holidays, College closures, CTD Closures, Student Activity closures, and breaks between classes.
2. Documented on the student attendance as a scheduled day off using a SDO indicator.
3. These do not count towards hours offered. No training was offered on scheduled days off.

## Student Attendance Requirements

1. Students are required to attend a minimum of 90% of the offered hours for each module. Students who fail to attend at least 90% of the offered hours for any module will fail the module. Specific modules may require 100% attendance; this will be noted in the syllabus for that module. For modules without finite start and end dates, as in the case of Culinary Arts, Business Technology and Medical Office Modules, students who are slow to progress due to poor attendance will first receive a warning via their Individual Progress Report (IPR) and then will fail that module or modules. Module failure will be documented on the IPR from.
2. Absences up to 10% of the clock hours in a payment period are considered to be excused absences. Absences in excess of 10% may be considered as excused under extenuating circumstances with supporting documentation submitted by the student. Excused absences will be determined by the instructor, program coordinator or CTD Director. Any absences in excess of 10% will NOT be considered excused for financial aid purposes.
3. Students who have reached 100% of their completion time but have not yet completed their program, need the written approval of the Program Coordinator or the CTD Director and the approval of any applicable funding agency prior to be extended and continue in the program. Modules not completed will be graded with a failing grade and students will need to be re-enrolled in any modules they are repeating due to failures.

## Leave of Absence

1. A student may request a Leave of Absence (LOA) due to unforeseen barriers that prevent the student from completing training and have a reasonable expectation of the student's return.
2. The student must request an LOA in advance, utilizing a Leave of Absence Form, which includes the reason for the LOA.



- 2.1. In some cases a student may not be available when the emergency occurs. In those cases the coordinator of the program may note on the Leave of Absence Form that the student was unavailable but was notified of the impact the leave of absence will have on them and the reason the student was unavailable (for example, hospitalization). The form must be collected at a later date.
3. The program coordinator or CTD director must approve a leave of absence in order to verify that the student and program know the impact of the leave of absence on the students training. Students must also sign the FA acknowledgement if they are receiving federal financial aid so they understand the impact of the leave of absence regarding their funding and financial aid.
  4. Any time additional fees are charged (i.e. repeat class that is not free), this must be considered an exit and then a new enrollment, with a new enrollment agreement. This is not a Leave of Absence. This is regardless of receipt of Federal Financial Aid or other assistance.
  5. A student can return to class prior to the end of the LOA, but the LOA does not end until a student has returned AND completed hours to the point in which they left the program (If a student repeats hours, they must complete the repeat hours prior to be taken off of an LOA).
  6. If a student fails to return from an LOA, the student's withdrawal date is the student's last date of attendance.
  7. LOA has a time limit of 180 days in 12 months and includes all repeated hours, weekends and scheduled breaks.
  8. Leaves of absences for students on financial aid must comply with current financial aid guidelines throughout the time they are granted. Leave of absences will be Approved or Unapproved for federal financial purposes according to federal financial aid guidelines.
  9. Students not on financial aid must follow the financial aid guidelines for the general leaves of absence.

# Costs and Payments



## Tuition and Fees

The following information reflects the College's tuition, fees and refund policies for the Fall 2017, Spring 2018 and Summer 2018 (all sessions) terms. Tuition is determined by whether a student is an in-state resident or a nonresident and whether a course is subject to differential tuition. For further residency information, please review the residency requirements or see an advisor.

**Tuition, fees, and refunds are subject to change without notice. See [www.pima.edu/tuition](http://www.pima.edu/tuition) for the most up to date information.**

### In-State Resident Tuition for Credit Classes Fall 2017, Spring 2018, and Summer 2018

Total Tuition = Cost of General Tuition credit hours +  
Cost of Differential Tuition A credit hours +  
Cost of Differential Tuition B credit hours

Credit Hours	General Tuition	Differential Tuition A*	Differential Tuition B**
1	\$81.50	\$106.00	\$114.00
2	\$163.00	\$212.00	\$228.00
3	\$244.50	\$318.00	\$342.00
4	\$326.00	\$424.00	\$456.00
5	\$407.50	\$530.00	\$570.00
6	\$489.00	\$636.00	\$684.00
7	\$570.50	\$742.00	\$798.00
8	\$652.00	\$848.00	\$912.00
9	\$733.50	\$954.00	\$1,026.00
10	\$815.00	\$1,060.00	\$1,140.00
11	\$896.50	\$1,166.00	\$1,254.00
12	\$978.00	\$1,272.00	\$1,368.00
13	\$1,059.50	\$1,378.00	\$1,482.00
14	\$1,141.00	\$1,484.00	\$1,596.00
15	\$1,222.50	\$1,590.00	\$1,710.00
16	\$1,222.50	\$1,614.50	\$1,742.50
17	\$1,222.50	\$1,639.00	\$1,775.00
18	\$1,222.50	\$1,663.50	\$1,807.50
19	\$1,222.50	\$1,688.00	\$1,840.00
20	\$1,222.50	\$1,712.50	\$1,872.50
21	\$1,222.50	\$1,737.00	\$1,905.00
22	\$1,222.50	\$1,761.50	\$1,937.50

Credit Hours	General Tuition	Differential Tuition A*	Differential Tuition B**
23	\$1,222.50	\$1,786.00	\$1,970.00
24	\$1,222.50	\$1,810.50	\$2,002.50
25	\$1,222.50	\$1,835.00	\$2,035.00
26	\$1,222.50	\$1,859.50	\$2,067.50
27	\$1,222.50	\$1,884.00	\$2,100.00
28	\$1,222.50	\$1,908.50	\$2,132.50
29	\$1,222.50	\$1,933.00	\$2,165.00
30	\$1,222.50	\$1,957.50	\$2,197.50

High school dual enrollment classes are not charged differential tuition.

- \* Beginning July 1, 2017 Differential Tuition A is assessed for courses in Automotive Technology, AUT; Aviation Technology, AVM; Computer Aided Design/Drafting, CAD; Dental Assisting Education, DAE; Law Enforcement Academy, LEA; Therapeutic Massage, TMA; Medical Laboratory Technician, MLT; Music Studio Instruction, MUP; Radiologic Technology, RAD; Respiratory Therapy, RTH; Truck Driver Training, TDT; Welding, WLD. MLT 110 (crosslisted with BIO 110), will be charged general tuition rates. Disciplines with Changes for 2017-2019: Truck Driver Training TDT (Changed from Differential Tuition B to Differential Tuition A)
- \*\* Beginning July 1, 2017 Differential Tuition B is assessed for courses in Dental Hygiene, DHE; Dental Lab Technology, DLT; Nursing, NRS; Technology, TEC.





## Center for Training and Development (CTD) Cost Breakdown 2017-2018

Program	Program Clock Hours	Module (Course) Fees	Textbooks	Uniforms/Supplies	HIPPAA/OSHA Training	CPR Training (Healthcare Provider Level)	Nursing Assistant Skills Lab (Certification exam preparation)	HESI Practical Nurse Exam	Program Total
Nursing Assistant	120	\$1,470	\$75	\$150	\$26	\$70	\$206		<b>\$1,997</b>
Practical Nurse	1,350	\$16,538	\$925	\$617	\$52	\$70		\$51	<b>\$18,253</b>
Patient Care Technician (PCT)	96	\$1,176	\$54	\$125	\$26				<b>\$1,381</b>
Surgical Technology	1,326	\$16,248	\$681	\$137	\$26	\$70			<b>\$17,162*</b>
Surgical Instrument Technician	746	\$9,139	\$681	\$137	\$26	\$70			<b>\$10,053</b>
LPN Refresher	200	\$2,450			\$26				<b>\$2,476</b>
RN Refresher	240	\$2,940			\$26				<b>\$2,966</b>
Baker's Helper	900	\$9,806	\$164	\$289	\$28				<b>\$10,287</b>
Cook's Helper	705	\$7,622	\$166	\$360	\$28				<b>\$8,176</b>
Kitchen Helper	335	\$3,600	\$166	\$360	\$28				<b>\$4,154</b>
Pantry Cook	605	\$6,779	\$166	\$360	\$28				<b>\$7,333</b>
Culinary Skills Fundamentals	1,000	\$10,463	\$166	\$490	\$28				<b>\$11,147</b>
Prep Cook	900	\$9,806	\$166	\$360	\$28				<b>\$10,360</b>
Accounting Assistant	922	\$10,209	\$529	\$17					<b>\$10,755</b>
Administrative Assistant	695	\$7,697	\$104	\$17					<b>\$7,818</b>
Computer Software Applications	420	\$4,652	\$260	\$17					<b>\$4,929</b>
Keyboard Operator	80	\$886	\$317						<b>\$1,203</b>
Legal Office Procedures	150	\$1,660							<b>\$1,660</b>
Legal Office Support	930	\$10,300	\$577	\$17					<b>\$10,894</b>
Medical Office Clerk	120	\$1,330	\$412						<b>\$1,742</b>
Medical Office Specialist	484	\$5,359	\$811	\$17					<b>\$6,187</b>
Medical Records Technician	924	\$9,685	\$1,230	\$34					<b>\$10,949</b>
Medical Terminology	66	\$731	\$154						<b>\$885</b>
Office Assistant 1	270	\$2,992	\$385	\$17					<b>\$3,394</b>
Office Assistant 2	360	\$3,984	\$96						<b>\$4,080</b>
Office Assistant 1 & 2	630	\$6,976	\$481	\$17					<b>\$7,474</b>
Office Specialist	900	\$9,968	\$577	\$17					<b>\$10,562</b>
Professional Medical Coding	270	\$3,046	\$573	\$17					<b>\$3,636</b>
Quickbooks	90	\$997							<b>\$997</b>

\* Surgical Technology: Association of Surgical Technologists (AST) student membership/certification exam. The AST membership/exam fee (\$247) is a third-party fee not included in the cost of the program.

## Current Fees

(subject to change)

Student Services Fee (per credit) .....	\$3.00
Technology Fee (per credit) .....	\$2.50

## Processing Fees

Processing Fee (per semester) .....	\$15.00
International Student Fee (per semester) .....	\$75.00
Transcripts (per copy) .....	\$3.00
Transcripts (next business day) .....	\$10.00
Transcript FedEx Delivery Fee .....	\$9.00
Career Interest Test .....	Not to exceed \$20.00
Placement Test Retake Fee (per test type) to retake third or any subsequent .....	\$10.00
GED/HSE Testing Fees	
For current GED/HSE fees, please go to <a href="http://www.pima.edu/ged">www.pima.edu/ged</a>	
Aviation Technology Exam .....	\$225.00
Payment Plan Late Fee .....	\$25.00 (per occurrence)
Returned Check Fee .....	\$25.00 (per occurrence)

## Financial Holds

If you owe an outstanding debt to the College, a financial hold will be placed on your account. You will not be allowed to register or receive any other services until your debt is paid in full. You can pay your debt at any campus cashier's office during regular business hours, online or by mail. If your debt has been placed with a debt collection agency you must deal directly with the agency to pay your debt. If you have any questions about your debt, please contact Student Accounts at [bursaronline@pima.edu](mailto:bursaronline@pima.edu) or 520-206-4574. **For an immediate release of a financial hold, the debt must be paid in full online or in person.**

Your debt may include the following (subject to change):

Past-due Tuition and Fees .....	Amount of tuition and fees due
Past-due Book Charges or Advance ...	Amount of unpaid balance
Debt Collection Agency Fees .....	Not to exceed 50 percent of balance owed
Late Fees .....	\$25.00 - \$100.00 \$25 per occurrence; maximum \$100
Non-sufficient Funds (NSF)	
Payment /Returned Check Fee .....	\$25.00 (per occurrence)
Excessive Loss or Breakage .....	Replacement cost
Lost Library Books .....	Replacement cost
Parking and Traffic Fines .....	\$10.00 - \$25.00 (per applicable regulation)

## Tuition and Fees Payment Methods

Tuition and fees must be paid in full by the published payment deadlines. Failure to pay by the deadlines may result in the loss of registration or late fees. The payment deadlines for each academic term can be found at [www.pima.edu](http://www.pima.edu). **Please Note:** If you are unable to pay the required tuition, options such as a Payment

Plan may be available.

**Important Notice:** By registering for classes you are accepting financial responsibility for all related tuition and fees. You must drop any unwanted classes by the official drop/refund/audit deadline, or be responsible for payment of all related tuition and fees associated with those classes. **Note:** Pima Community College reserves the right to drop unpaid registrations at any time.

Tuition and Fees may be paid via:

- Credit Card - Visa, MasterCard, American Express and Discover
- Check - personal, traveler's or cashier's
- Money order
- Cash (please do not mail). Please refer to [www.pima.edu/payments](http://www.pima.edu/payments) for more information.

### Paying Online

To pay online, login to MyPima select the Student tab, Register and Pay, and view the My Account section. The current balance is displayed in this section. Select the MyAccount Manager link in this section to make an online payment. Online payments can be made using a credit card or by electronic transfer from a personal checking or savings account.

### Paying in Person

Payments can be made in person at any campus cashier's office. Please call the College information line, 520-206-4500, for hours of operation. A picture ID is required for all in-person payments.

### Paying by Mail

Mail your payment directly to the Pima Community College Student Accounts Office. The College accepts personal checks, money orders, cashier's checks and traveler's checks by mail. Do not mail cash. To mail a payment, please follow these simple steps:

1. Make your check or money order payable to Pima Community College.
2. Include your student identification number and the term for which you are paying (e.g., Fall 2017) on the check/ money order. This will ensure timely processing of your payment.
3. Be sure to mail your payment early enough for it to be received by the payment deadline.
4. **Mail your payment to the following address:**  
Pima Community College  
Student Accounts Office  
4905D E. Broadway Blvd.  
Tucson, AZ 85709-1225

### Additional Notes on Payments

- The College will not accept checks printed without a name or address, second-party, out-of-country or postdated checks.
- College employees will write student identification numbers on checks as needed.
- Returned check payments are subject to a \$25.00 fee.
- Returned checks may be forwarded to a debt collection agency and/or the Pima County Attorney's Office for collection.
- Check or cash payments made on a student's behalf that result in a check being issued will be refunded to the student unless special arrangements are made with the Student Accounts Office at the time of payment.

**Attention:** It is the policy of Pima Community College to electronically convert and process paper checks received via mail using



the Automated Clearing House (ACH) Network, under the rules governed by the National Automated Clearing House Association (NACHA) and the Federal Reserve Bank.

### Payment with Financial Aid

Your tuition and fees will be authorized for payment through financial aid if you meet **both** of the following requirements:

1. You have received confirmation of a financial aid award.
2. The award is large enough to cover your entire tuition and fees.

If you have any questions regarding the status of your financial award, you may contact any campus Student Services Center or call the Financial Aid Hotline at 520-206-4950.

## Student Refund Policy for Credit Courses

### Regular Refund Policy

Students who officially drop one or more classes by the refund deadline may be eligible for a refund. The drop must result in a decrease to the total tuition assessment as determined by the number of credit hours for which the student is registered and the overall credit balance on the account. Go to [pima.edu/paying-for-school/paying-your-bill/refunds](http://pima.edu/paying-for-school/paying-your-bill/refunds) to determine if the drop will decrease the tuition assessment.

Students who drop all classes within the official refund period are eligible for a 100 percent refund of paid tuition and fees. Outstanding charges owed to the College may be deducted from the refund amount.

If the College cancels a class or classes, students will receive a 100 percent refund of paid tuition and fees for the class(es) being canceled. Tuition covered by financial assistance may be returned to the awarding entity.

Refunds are processed by the Student Accounts Office beginning the week following the drop/refund/audit deadline. For more information, go to [pima.edu/paying-for-school/paying-your-bill/refunds](http://pima.edu/paying-for-school/paying-your-bill/refunds). Early refunds must be requested through the Student Accounts Office at [bursaronline@pima.edu](mailto:bursaronline@pima.edu).

**Note:** Withdrawing from a class after the drop/refund/audit deadline will not reduce the tuition obligation or create a refund.

### Regular Refund Schedule

#### Course Length

#### (Enrollment Period) . . . . . Refund Deadline

Regular 16 weeks . . . . . within 13 calendar days from the first class meeting or the start of the term

Seven or more weeks . . . . . within seven calendar days from the first class meeting or the start date of the term. See instructor for information.

Four or more weeks . . . . . within four calendar days from the first class meeting or the start of the term

Two or less than four weeks . . . . . by the day of the first class meeting

less than two weeks . . . . . prior to the day of first class meeting

Noncredit/Study tours . . . . . Special conditions, see Student Refund Policy for Noncredit Activities and Study Tours

Audit classes . . . . . no refunds

**Note:** Refer to the online class schedules for start dates. Refunds will not be issued for audit classes or classes withdrawn after the official refund deadlines.



## Special Notes on Refunds

- Refunds for payments made by cash or check are generally processed via check or electronic refund. The electronic refund option allows any refund due you to be delivered to your checking or savings account electronically. Please note: It will take five business days for your bank to verify the information you entered.
- If you paid by credit card, your refund will be credited back to the most recent payment method used.
- Signature debit payments will be refunded back to the card; pin debit payments will be in the form of a check.
- Payment made by an official sponsoring agency will be returned to that agency.
- Check or cash payments made on a student's behalf that result in a check being issued will be refunded to the student unless special arrangements are made with the Student Accounts Office at the time of payment.
- The first official refund checks will be mailed the week after the drop/refund/audit deadline.
- Any outstanding debts owed to the College may be deducted from your refund.
- If you receive federal financial assistance, your refund will be paid directly back to the sponsoring program as required under federal guidelines. Please see "Return of Federal Financial Aid Funds" for more details.

## Special Refunds Policy

Students who **totally withdraw** from the College due to an unforeseen circumstance may request a special provision refund at the admissions office on the campus where they are taking classes. The request must be made in writing and must be made during the semester that the withdrawal occurred. Only tuition will be refunded and the amount of the refund will be pro-rated based on the schedule. The campus president (or designee) may approve a refund for extenuating circumstances not specifically included in the following provisions:

1. Serious illness or injury. A written doctor's statement verifying that an illness or injury prevented the student from completing classes must be provided.
2. Death of a close family member. The College defines close family members as your spouse, children, parents, grandparents, siblings, grandchildren, or in-laws. Official documentation (such as a death certificate) must be provided in order to receive a refund.
3. Military Temporary Duty (TDY) Assignments. The assignment must be involuntary and unforeseen as of the official deadline for dropping the classes in question. A copy of the official orders requiring the TDY must be provided with the request.

**Note:** The College reserves the right to refuse any special provision request.

You must make your special provisions refund request before the end of the academic term from which you withdrew. Requests for refunds made after the academic term has concluded will not be granted.

## Special Provisions Refund Schedule (pro-rated)

Refer to [www.pima.edu](http://www.pima.edu) for specific dates.

Elapsed Portion of Class(es)	Refund (paid tuition)
30% .....	75%
45% .....	50%
60% .....	25%
Greater than 60% .....	No refund

## Return of Federal Financial Aid Funds (Title IV Funds)\*

Federal regulations stipulate that a student who receives Federal Student Aid funds and completely withdraws from the College is required to return a percentage of those funds.

Students "earn" Federal Student Aid funds in direct proportion to the length of time the student remains enrolled in the term.

The College must follow these steps in the return of funds process:

1. Determine the percentage of the period that the student completed (Days attended divided by the days in period = Percentage completed).
2. Apply that percentage to the total awarded Federal Student Aid funds for which the student established eligibility before withdrawing (Total aid disbursed multiplied by percentage completed = Earned aid).
3. Subtract earned aid from disbursed aid. This is the unearned aid. (Earned aid minus disbursed aid = Unearned aid).
4. Distribute responsibility for returning unearned aid by the College and the student. The College's share is determined first by taking the lesser of:
  - The total amount of earned aid; or
  - An amount equal to the student's tuition and fee charges multiplied by the percentage of aid unearned.

This comparison ensures that the College will not return more aid than it could have kept to cover tuition and fee charges and that the student will not be required to return aid he or she could have received as a cash disbursement.

The student's share of the amount to be returned is the difference between the total that must be returned and the College's share.

5. Allocate unearned aid back to the Federal Student Aid programs, including Unsubsidized Stafford Loan, Subsidized Stafford Loan, Federal Perkins Loan, PLUS Loan, Federal Pell Grant, FSEOG, LEAP (SSIG).

The College's share is fully allocated before any of the student's share.

- The College returns unearned aid in the order shown, up to the full amount disbursed from one program before moving on to the next.
  - Once the College's share has been distributed back to the Federal Student Aid programs, then the student's share is allocated in its entirety.
6. If the amount of cash disbursement received by the student exceeds the student's share, that amount must be repaid to the College directly.

## Withdrawals

The withdrawal date is the last date of attendance as determined by the attendance records. Please refer to the withdrawal process at [www.pima.edu](http://www.pima.edu).

- Attendance is taken for all courses; the withdrawal date used is the student's last day of academic attendance.
- If a student drops or does not attend a course (es) in the term, the student's Federal Student Aid funds are completely cancelled and the student is required to repay all Federal Student Aid funds disbursed.
- If a student withdraws from a part-of-term course within the term, he/she must still be attending another course or considered to be withdrawn, even if registered for a future course(s) starting in the next term. The student must, at the time of withdrawal from a part-of-term course, if they are not attending another course, provide a written statement to the College indicating their intent to attend a future course within that term. (If the student doesn't attend the future course, a Return of Title IV calculation is required; withdrawal date/last date of attendance back to the original confirmed date).

**\*Note:** This refund policy is based on U.S. Department of Education regulations and it is subject to change if Federal regulations change.

## Noncredit Refund Policy

Community Campus handles the refund requests for special interest, noncredit activities and study tours. Refund requests must be received seven (7) calendar days prior to the start of the activity. See "Cancellation Policies for Study Tours" for penalties and refunds when ending (termination of) your registration in study tours and other trips. If the College cancels an activity, students will receive full refunds.

Every effort is made to contact students who have enrolled before the start date if an activity is canceled. For more information, contact the Community Campus at 520-206-6579.

## Cancellation Policies for Study Tours

**One-Day Trips:** Requests to end registrations must be received seven (7) days prior to the tour date.

**Multi-Day Trips:** 100 percent of the fee will be refunded when your cancellation request is received 60 calendar days or more prior to the tour start date.

- 75 percent of the fee will be refunded when your cancellation request is received 46-59 days prior to the tour start date.
- 50 percent of the fee will be refunded when your cancellation request is received 31-45 days prior to the tour start date.
- No refunds will be issued when your cancellation request is received within 30 calendar days of the tour start date.

**Note:** When "Special cancellation policy applies" is cited in a tour description, cancellation requests will be assessed on an individual tour basis. These cancellation penalties may exceed those previously stated.

For more information, please call 520-206-6579.

# Financial Assistance





# Financial Aid/Scholarships

## General Information

PCC Financial Aid offers a full range of financial aid information and options. Financial assistance comes from federal, state, and institutional programs, as well as private donors. The first step to applying for financial aid is to complete the Free Application for Federal Student Aid (FAFSA).

The Free Application for Federal Student Aid (FAFSA) is available online at [www.fafsa.gov](http://www.fafsa.gov).

All PCC students are encouraged to complete the FAFSA. Students who submit their FAFSA and all requested documentation to PCC Financial Aid by the Financial Aid priority deadline:

- November 1 (spring semester)
- April 4 (fall semester)

Will be considered for federal and state funds that have limited availability. Visit any campus Student Services Center for help completing your FAFSA.

Additional information about PCC Financial Aid is available at [www.pima.edu/financialaid](http://www.pima.edu/financialaid) and via your MyPima Financial Aid tab.

Pima also offers financial aid workshops. They range from financial literacy programs to how to complete your FAFSA to the Financial Aid Orientation that all financial aid recipients are required to attend. See the schedule at [www.pima.edu/calendars](http://www.pima.edu/calendars).

## Federal Student Aid Programs

### Federal Pell Grants

The Federal Pell Grant program provides financial assistance for students who meet Pell eligibility guidelines. Determination of eligibility begins with completion of the FAFSA. Pell funds are considered "gift aid" and are awarded based on financial need and enrollment level. Gift aid does not have to be repaid, unless the student fails to complete the enrollment for which they received aid.

### Federal Direct Stafford Loans

The Federal Direct Stafford Loan Program offers "subsidized" and "unsubsidized" loans. A Federal Direct Subsidized Stafford Loan is awarded on the basis of financial need. If a student qualifies for a Subsidized Stafford loan, the federal government pays the interest on the loan as long as the student is enrolled in at least six credits and has not exceeded the published length of time needed to complete the program of study for which they received the loan. The student is responsible to begin repaying the interest upon dropping below six credits or leaving school.

Unsubsidized Stafford loans are not awarded on the basis of need. If a student qualifies for an Unsubsidized Stafford loan, the student pays the interest from the date the loan is given until the loan is repaid in full. For both Subsidized and Unsubsidized loans, the interest rate and origination fee are determined each year, and the borrower enters repayment of the loan(s) beginning six months after they graduate, leave school, or drop below six credits in a term.

### Federal Direct Plus Loan Program

The Federal Direct Plus Loan program is for parents who have

dependent students. This loan program enables parents to borrow funds to pay for the education expenses of a child who is an undergraduate student enrolled at least half-time. Parents cannot borrow more than the cost of education minus the amount of other financial aid received. The interest rate is variable, but will never exceed 9 percent. The interest rate for Plus Loans is adjusted each year.

Payment of principal and interest begins within 60 days after the last issuance of loan money to the parents. In addition, interest begins to accrue from the date the first loan payment is made to the student and/or parent.

### Campus-Based Programs

Pima Community College participates in two campus-based programs: the Federal Supplemental Educational Opportunity Grant (FSEOG) and Federal Work Study (FWS). Every year, the Federal government provides the College a certain amount of funds to award students. FSEOG funds will be awarded to the neediest students first. FWS funds are awarded based on need and acceptance of a qualifying campus job. Since the funds given to the College are limited, students are encouraged to complete their FAFSA as early as possible to meet the College's Financial Aid priority deadline: **November 1** (spring semester); **April 4** (fall semester).

### Federal Supplemental Educational Opportunity Grants (FSEOG)

A Federal Supplemental Educational Opportunity Grant (FSEOG) is for undergraduate students with exceptional financial need. In awarding FSEOG, the College gives priority to students who receive the Federal Pell Grant and met the College's Financial Aid priority deadline. FSEOG is gift-aid and need not be paid back if a student completes the enrollment for which the award was received.

### Federal Work Study

The Federal Work Study (FWS) Program provides jobs for students with financial need who are enrolled. Students may work part-time in a job that is either on-campus or off-campus. The program encourages community service work and work related to the student's program. Funds are limited and priority consideration will be given to students who meet the College's Financial Aid priority deadline date. For more information on securing an FWS position, visit [www.pima.edu/financialaid](http://www.pima.edu/financialaid).

## State Financial Aid Programs

### Arizona Leveraging Educational Assistance Partnership (LEAP)

The Arizona Leveraging Educational Assistance Partnership (LEAP) program makes grants available to students with financial need. The College determines the amount of each award based on individual need. Funds are limited, so the College gives priority to students who meet the College's Financial Aid priority deadline.

### Arizona Foster Youth Programs

PCC and the state of Arizona are committed to helping Arizona's foster youth meet their educational goals and make college a financial reality. The state of Arizona offers specific programs that do not require repayment to help eligible current and former foster youth with college costs.



### Arizona Foster Youth Award (tuition waiver)

This five-year pilot program, which began in 2013, uses a combination of federal grants, scholarship and college aid to cover the full amount of Arizona resident tuition and fees for foster youth.

### Arizona Education and Training Voucher (ETV)

The Arizona Education and Training Voucher (ETV) is a federally funded grant used to support foster youth who have aged out of the foster care system and have enrolled in a college, university or vocational training program. Students must enroll before their 21st birthday and may continue to receive support until age 23. Funds may be used for tuition, housing, books, student loan repayments and qualified living expenses.

### For More Information

For more information on managing your financial aid, Academic Progress guidelines and Title IV refunds go to [www.pima.edu/financialaid](http://www.pima.edu/financialaid) or your MyPima Financial Aid Tab.

## PCC Foundation Scholarships

Every year, the Pima Community College Foundation awards hundreds of scholarships funded by generous private donors. Scholarships may be awarded on the basis of merit, financial need or a combination of both, as well as other criteria set by the donors.

Many scholarships are general in nature, while others target specific program areas such as healthcare or occupational programs.

The PCC Foundation Scholarship application is available at [www.pima.edu/scholarships](http://www.pima.edu/scholarships).

Students are not required to complete the Free Application for Federal Student Aid (FAFSA) to be eligible for Foundation scholarships. However, students must be enrolled at Pima before a PCC Foundation scholarship is awarded.

Applications are reviewed by the PCC Foundation Scholarship Committee composed of representatives from PCC, the Office of Financial Aid and the community.

## PCC Scholarships and Grants

Pima Community College helps students achieve their dreams through scholarships and grants. For additional scholarship opportunities, visit [www.pima.edu/otherscholarships](http://www.pima.edu/otherscholarships).

### All-Arizona Academic Team Scholarship

All-Arizona Academic Team Scholarships are available to qualified students from each PCC campus. Applications are generally accepted October through November.

### Chancellor's Service Scholarship

The Chancellor's Service Scholarship is awarded to new and returning PCC students who have shown competency both academically and civically. Applicants are required to have a minimum 2.5 GPA and documented completion of community service/volunteer work.

### Pima Book Scholarships

Pima Book Scholarships, funded by Follett Bookstores, are available to help qualified PCC students purchase textbooks at the

campus bookstores. Applicants must have a minimum 2.5 GPA and demonstrate financial need.

### Pima Merit Scholar Awards

The Pima Merit Scholar Awards are offered to graduating Pima County high school seniors who have demonstrated academic excellence.

### Pima Opportunity Grant

The Pima Opportunity Grant is awarded to students who demonstrate financial need and have a minimum 2.5 GPA. This scholarship can provide full or partial tuition and fees.

## Payment Plan

Payment Plans are available beginning the first day of registration for the fall, spring, and summer semesters. There are no enrollment fees or interest charges. Payment Plans are not available to International Students.

For more information, go to [www.pima.edu/costs/paymentplan](http://www.pima.edu/costs/paymentplan).

## Veterans Educational Assistance

Pima Community College is approved as a degree granting institution for the attendance of veterans and veteran's dependents entitled to educational assistance. Students seeking to use their Veterans educational benefits must complete the PCC Application for Admission and meet with a veteran advisor at any campus Student Services Center to complete required paperwork.

Veterans educational benefit recipients also must submit a Veteran's Certification Worksheet to the Military and Veterans Services Office each semester in order to receive payment. It is the students responsibility to promptly inform the Military and Veterans Services Office of changes to their program of study that could affect their benefits. The Military and Veterans Services Office will forward all appropriate documents concerning the application to the VA processing center located in Muskogee, Oklahoma. Veterans who take courses that are less than 16 weeks long will only be paid for the actual enrollment period. Eligible persons receive veterans educational benefits based on the following:

- Full-time: 12 or more semester credits
- Three-quarter-time: Nine to eleven and one-half credits
- Half-time: Six to eight and one-half semester credits
- One-quarter-time: Three to five and one-half semester credits

Students applying for VA educational benefits must select an approved program of study. Students will only receive VA benefits for courses taken from the MyPima Degree plan. Students must meet with their assigned veteran's advisor to develop a MyDegree plan. Make an appointment by contacting 520-206-2266, [veterans@pima.edu](mailto:veterans@pima.edu) or directly contacting their veteran's advisor.

### Transfer of Previously Earned Credit

Department of Veteran Affairs (DVA) requires that all students receiving educational benefits have their "prior military and/or college experience" evaluated for credit toward their program of study at Pima Community College. Students must have all official college and military transcripts sent to PCC for evaluation. Upon receipt of the transcripts, the College will evaluate them to

determine what credit can be accepted at Pima. A Veteran Benefit Recipient (VBR) may not be certified until all transcripts have been received and evaluated.

### **Satisfactory Academic Progress for Veteran Benefit Recipients**

Veteran Benefits Recipients (VBR) Satisfactory Academic Progress in the College Catalog under the Standards of Academic Progress for Credit Students section. Refer to page 36.

### **Additional Benefits**

Students who are eligible for DVA educational benefits and have completed the enrollment certification process may apply for Tutorial and/or DVA Work-Study. These programs are available in addition to educational benefits. For more information concerning eligibility for these programs and the process to obtain this assistance, contact [veterans@pima.edu](mailto:veterans@pima.edu).

Veterans also can visit the PCC Veterans Center located at the Downtown Campus. For more information, go to [www.pima.edu/paying-for-school/veterans-benefits/index.html](http://www.pima.edu/paying-for-school/veterans-benefits/index.html).

## **Pima Community College Foundation**

The Pima Community College Foundation was incorporated as a not-for-profit organization in 1977 by Pima County business leaders to assist Pima Community College in its efforts to expand educational opportunities and services in the community. Today, the PCC Foundation provides a means for citizens to actively support the future growth and development of the community college.

The mission of the PCC Foundation is to support PCC with the resources necessary to provide opportunities for success for our students and community. Areas of support include student scholarships, equipment and supplies, program development and special needs of the College.

The PCC Foundation also oversees the Pima Community College Alumni Association, dedicated to maintaining relationships with former students. The Association provides a continuation of the services and resources that are available to students, as well as opportunities for social events and fundraising projects. To learn more, visit [www.pima.edu/alumni](http://www.pima.edu/alumni) or email [alumni@pima.edu](mailto:alumni@pima.edu).

Gifts to the Foundation are tax deductible, and the Foundation will assist prospective donors in making donations, bequests, and in the planning of trust and will arrangements for the College. For more information or assistance, please contact the Foundation office at 520-206-4646, or visit [www.pima.edu/foundation](http://www.pima.edu/foundation) or email [foundation@pima.edu](mailto:foundation@pima.edu).

### **Foundation Officers, 2017-2018**

Tommy Roof, Chair  
Robert D. Ramirez, Chair-Elect  
W. Craig (Hoot) Gibson, Secretary  
Staci Lopez, Treasurer  
Tobin (Toby) Voge, Immediate Past Chair  
Rachel Schaming, Executive Director

### **Foundation Board of Directors**

Monica Barcelo  
Gloria Bloomer  
Jeff Ell  
Greg Good  
Andrew Heideman  
Dennis Holden  
Mike Kocsis  
Lee D. Lambert  
Rich Moret  
Betty J. Niles  
Leo Roop  
Anne Rounds  
Gary Zimnoch  
Mark Ziska

# Student Services and Student Life





## Student Services

All student services are available at the Student Services Centers at any campus. In-person student services for credit classes are not available at the Community Campus. The Community Campus offers student support services by email and phone. Students can call 520-206-6408 or email [virtualsupport@pima.edu](mailto:virtualsupport@pima.edu) for assistance. Virtual services include general information, registration, advising, tutoring and other support.

### Admissions/Registration

Admissions and registration services are available year-round at [www.pima.edu](http://www.pima.edu) and at campus Student Services Centers. For information on admission, registration, residency, transferring and graduation, see the Admissions, Registration, and Records section of this catalog, or visit [www.pima.edu](http://www.pima.edu).

### Advising/Counseling

Advisors and counselors are available year-round to help students choose courses and make decisions that best meet their educational needs. Both walk-in service and appointments are available. Students should meet with an advisor, counselor, or faculty member at least once each semester to discuss proper course selection. New students should read the **“Before The First Semester”** section of this catalog (under Admissions) to review steps that are crucial to student success.

Counseling services can help students in a variety of ways. Counselors help students decide on college majors and careers that match their interests, abilities, and personalities, and develop strategies for college success. They also offer support with stress management and personal issues and help students identify appropriate community agencies for assistance.

### Assessments

Students are required to take reading, writing, and mathematics or English as a Second Language (ESL) assessments for appropriate placement in courses. Assessments are key to appropriate course selection and higher scores can mean fewer classes needed to complete a degree. A little preparation and planning to assess will make a large difference in your scores.

To take the assessments, visit any campus Testing Center. Assessments are given on a walk-in basis. Bring a photo ID and allow two to three hours to complete the assessments.

Sample assessment questions are available at [www.pima.edu/new-students/take-assessments/sample-questions.html](http://www.pima.edu/new-students/take-assessments/sample-questions.html).

(For assessment requirements, please refer to “New Student Requirements for Assessment, Advising, and Orientation” in the Admissions section of this catalog.) Some locations offer other testing services, including those for the High School Equivalency (HSE) diploma, and placement tests for specific disciplines. Computer-based HSE testing is offered at Community Campus.

Arrangements for disabled students (such as extended time, large print, writing assistants, and interpreters) are available through Access and Disability Resources. For more information, refer to the Access and Disability Resources information in this section.

## Bookstores

Similar classes held on different campuses may have different textbook requirements. Students should be sure they are purchasing the correct books for the location of their classes. The bookstore staff is available to assist students in selecting appropriate textbooks based on instructor and course reference number. For textbook information and ordering, visit the bookstore website at [www.pima.bkstr.com](http://www.pima.bkstr.com).

## Cafés

Fresh food and beverage options are available at the Downtown, Northwest, West, Desert Vista and East campuses. All College locations offer snack and beverage vending.

## Department of Public Safety (College Police)

The PCC Department of Public Safety (DPS) provides law enforcement, security and public service throughout the College District 24-hours a day, seven-days a week. The DPS mission is to provide a safe and secure environment for PCC students, staff, faculty and visitors. Each main campus has a police office that maintains lost and found and basic First Aid services. Escorts to and from a vehicle are available upon request.

DPS provides an annual crime statistics and Clery Crime Act Report that includes statistics for the previous three years concerning reported crimes that occurred on campus and in certain off-campus buildings owned or controlled by the Pima County Community College District, and on property within, or immediately adjacent to and accessible from the campus.

The report also includes institutional policies concerning campus security, such as policies concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, registered sex offenders, and other matters. You can obtain a copy of this report by contacting 520-206-2671. The report can also be found at [www.pima.edu/dps/reports](http://www.pima.edu/dps/reports). Updates and important safety and security issues may be published in the following: the student newspaper, Aztec Press, the weekly online employee newsletter @PimaNews, and through the College’s internet home page, [www.pima.edu](http://www.pima.edu). PCCAlert is a text/email message system that notifies subscribers of an immediate emergency occurring on or around PCC’s campuses. Text the word alerts to 79516 from your cell phone to sign up. PCC email accounts are automatically subscribed to the system.

The College’s Parking and Traffic Regulations also are available at [www.pima.edu/administrative-services/college-police/parking-traffic-regulations.html](http://www.pima.edu/administrative-services/college-police/parking-traffic-regulations.html).

For emergencies and to report crimes or suspicious activity call 911 or 520-206-2700. For non-emergencies or escort requests call 520-206-2700.

## Career Services

Career counseling is available at each campus. Counselors can assist students in deciding on a college major and on a career that matches their interests, skills, and personality. For a counseling appointment, call any campus Student Services Center. MyCareer-Link, online tools, individual assistance and College courses are offered in a variety of career planning and development areas. These



Student Services	CC	DC	DVC	DMAFB	EC	NWC	WC	Web
Access and Disability Resources	•	•	•	•	•	•	•	•
Admissions and Registration		•	•	•	•	•	•	•
Advising/Counseling		•	•	•	•	•	•	•
Assessment	•	•	•	•	•	•	•	
Bookstore		•	•		•	•	•	•
Café		•	•		•	•	•	
Career Services	•	•	•		•	•	•	•
Campus Police Services	•	•	•		•	•	•	
Cashier	•	•	•		•	•	•	•
Financial Aid		•	•		•	•	•	•
International Student Services							•	
Job Information		•	•		•	•	•	•
Libraries		•	•		•	•	•	•
Orientation		•	•		•	•	•	•
Student ID Cards	•	•	•		•	•	•	
Transcripts (official)		•	•		•	•	•	•
Tutoring		•	•		•	•	•	•
Veterans Services		•	•	•	•	•	•	•

**Key:****CC** = Community Campus**DVC** = Desert Vista Campus

Education Center

**NWC** = Northwest Campus**DC** = Downtown Campus**DMAFB** = Davis-Monthan AFB**EC** = East Campus**WC** = West Campus

resources and services cover career planning, résumé writing, career counseling and job search strategies and are available at any campus. MyCareerLink services include résumé assistance and job searches. For more information, visit [www.pima.edu/careers](http://www.pima.edu/careers).

## Cashier

Students can pay their tuition online or at any campus cashier's office. Accepted forms of payments include cash, check, money order, and credit cards. Tuition and fees must be paid in full by the published payment deadlines. Failure to pay by the deadlines may result in the loss of registration or late fees.

Please Note: If you are unable to pay your tuition, there may be financial options, such as a Payment Plan, available to you. For more information on payment options, visit the Costs and Payments section of this catalog.

## Access and Disability Resources

Pima Community College endeavors to make all of its facilities and programming accessible to all students. The College complies with the Americans with Disabilities Act Amendments Act (ADAAA) and Section 504 of the Rehabilitation Act of 1973, as well as other applicable federal and state laws and regulations that prohibit discrimination on the basis of disability. No qualified person will, solely by reason of disability, be denied access to, participation in, or the benefits of any program, activity or service offered by the College. This supports the success of students with disabilities, including but not limited to those with physical, emotional/intellectual disabilities. Campus buildings and facilities comply with ADA standards by providing access to assistive technologies in labs, libraries and classrooms. Students may also make requests for these technologies for classes held at off site College locations.

## Services Provided

Access and Disability Resources (ADR) collaborates with PCC students, faculty, staff and community to promote equal access to college programming for students with disabilities. ADR develops ADA and Section 504 accommodations and academic adjustments to ensure access for students with disabilities. Accommodations are processed through ADR offices located at each campus. Students must first register with ADR for these accommodations. ADR program specialists provide intake assistance and determine eligibility for services based on supporting documentation. Supporting documentation may include, but is not limited to, high school records (e.g. IEP or 504 plan), physician/other provider statements, and medical or psychological evaluations. Actual documentation needs are established by the program specialist. Students who do not have written documentation, but believe that an accommodation is needed, should contact ADR to discuss their situation. ADR program specialists, in collaboration with the student, faculty and other College personnel, monitor and adjust accommodations as needed. Students who want to request accommodations related to pregnancy, may also make requests through ADR.

When appropriate, services provided by ADR may include, note-taking, reading and writing assistance, sign language interpreters, real-time transcribers, video-captioning, alternative formats for textbooks and other references, assistive technology, alternative testing services, and community agency referrals.

## Contacting ADR

Students may contact an ADR specialist at any campus to begin an accommodation request or to continue with ADR services each semester. ADR also serves as a resource to College personnel and welcomes inquiries and requests for collaboration and technical assistance. For more information, contact an ADR specialist at any campus, [ADRhelp@pima.edu](mailto:ADRhelp@pima.edu) or 520-206-6688.

**Desert Vista Campus**

5901 South Calle Santa Cruz, Tucson, AZ, 85709  
520-206-5151 (Voice/TTY)

**Downtown Campus**

1255 North Stone Ave., Tucson, AZ, 85709  
520-206-7286 (Voice/TTY)

**East Campus**

8181 East Irvington Road, Tucson, AZ, 85709  
520-206-7699 (Voice/TTY)

**Northwest Campus**

7600 North Shannon Road, Tucson, AZ, 85709  
520-206-2209 (Voice/TTY)

**West Campus (and services for Community Campus)**

2202 West Anklam Road, Tucson, AZ, 85709  
520-206-6688 (Voice/TTY)

**Financial Aid**

There are many ways for students to pay for their education under various grant, loan and scholarship programs. Although the federal government provides the largest amount of aid, a student may qualify for funds from Pima Community College and from private donors. For more information, please see the Financial Aid/Scholarships section of this catalog, visit [www.pima.edu](http://www.pima.edu) or call 520-206-4950.

**Insurance**

Students interested in purchasing health insurance under the Affordable Health Care Act can research their options at [www.healthcare.gov](http://www.healthcare.gov).

**International Student Services**

The Center for International Education and Global Engagement, located at West Campus, was established to help international students reach their educational goals. For more information, call 520-206-6732.

**Job Information**

Looking for a job? MyCareerLink is the College's online employment search portal. Visit [www.pima.edu/careers](http://www.pima.edu/careers) for more information.

**Library Services**

Pima Community College provides library services without the limits of time, place or distance. Library resources include books and eBooks, journals and eJournals, DVDs, streaming media, online research databases and reference collections. All libraries have staff available to answer reference questions and assist students in using library and research resources. Instructors may request library instruction for their courses. Research databases can be accessed by students on or off campus. Library materials may be transferred between campuses. Campus libraries also lend laptop computers, calculators and other electronic devices. Ask library staff at each campus for device availability and lending policies. The libraries also provide lounge areas, as well as areas for learning and study. Visit [www.pima.edu/current-students/library](http://www.pima.edu/current-students/library) for more information.

**Orientation**

All new students attending college for the first time must complete a New Student Orientation. Before doing so, students must be admitted and take the reading, writing, and math assessments. Visit [www.pima.edu/orientation](http://www.pima.edu/orientation) or contact any Student Services Center for more information.

**Parking and Bus Service**

Free parking is provided at all Pima Community College campuses. However, students are responsible for reading and understanding the College's parking and traffic regulations. For complete information on parking and traffic regulations, see the Pima County Community College District Parking & Traffic Regulations for Motor Vehicles, Bicycles and Non-Pedestrian Devices, available at all campus libraries and online at [www.pima.edu](http://www.pima.edu). For information regarding how to obtain disabled parking permits, contact an Access and Disability Resources (ADR) specialist at any campus.

To organize a car pool, call RideShare (520-884-7433) or visit [www.sunrideshare.org](http://www.sunrideshare.org) for more information. For students interested in riding the public bus, SunTran provides bus service to all campuses. Please visit [www.suntran.com](http://www.suntran.com) for schedule information and trip planning tools. Current bus schedules also are available in the Student Life area of each campus or by calling SunTran at 520-792-9222.

In accordance with A.R.S. 15-4444D, all vehicles allowed to park in any Pima Community College parking lot must comply with the emissions standard as stated in A.R.S. 49-542.

**Specialized Programs**

Pima Community College has designed special programs to assist individuals who are reentering the workforce, international students, veterans and students with disabilities. These programs may help qualified students get financial aid or benefits, career information, counseling, advising, and tutoring. Some campuses offer specific activities for certain populations. Contact any campus Student Services Center for more information.

**Student Identification Cards**

A student identification card provides access to PCC libraries, bookstores, assessment/testing centers, athletics facilities, and computer labs. Students may add value to their ID card to pay for printing in College libraries and labs. Students may use their PCC ID to receive discounts on many events in Tucson. ID Cards can be obtained at any campus cashier's office.

**Transcripts**

Unofficial transcripts may be obtained through MyPima and at any campus Student Services Center. Official transcripts may be requested through MyPima, at any campus, center or [www.pima.edu/transcripts](http://www.pima.edu/transcripts).

**Tutoring**

Free tutoring is available in a variety of subjects for students who need help in their studies. Contact any campus Learning Center for additional information.



## Student Life

Pima Community College offers a rewarding environment for its students. There are opportunities to get together to share common interests, celebrate diverse cultures, enjoy various cultural events, and much more. In addition, there are avenues available to develop and demonstrate leadership qualities and to be a voice within the College. Specific information on student activity boards, student clubs and organizations, and cultural events is available at the offices of Student Life on any campus.

## Clubs and Organizations

For those students with similar interests, the College has a variety of clubs and organizations.

## Student Advisory Boards (SABs)

Students have a voice in College functions through recognized campus Student Advisory Boards (SABs). SABs are open to all students and include student governance representatives, activities and programming committees, and clubs and organizations.

Students are urged to volunteer for College task forces and committees.

## Performing Arts

PCC provides experience in the performing arts at its comprehensive Center for the Arts, headquartered at the West Campus. It houses the 420-seat Proscenium Theater, a studio theater, a recital hall, stage shops, classroom space, an art gallery, and an outdoor amphitheater. In addition, PCC's Theater Department is known for its contemporary, multicultural focus. The department presents student performances and Live Arts events at the Center for the Arts throughout the year. Discounted rates to performances are available to students with a valid PCC Student ID. For more information, call the Center for the Arts at 520-206-6988; for information on performance tickets, call the CFA box office at 520-206-6986.

## Phi Theta Kappa

The College offers membership in Phi Theta Kappa (PTK), an international honors society. The members of this society have prestige of membership, leadership opportunities, availability of honor society scholarships, involvement in community projects, and acquaintance with other honor society members.

For additional information, contact any campus Student Life office.

## Publications

Students interested in writing, editing, and reporting, can work for one of Pima's two student publications. Aztec Press, located at the West Campus, is a bi-monthly newspaper that provides students an opportunity to learn journalism. For more information about serving on the newspaper staff, please contact either the Arts and Communications Division office or Aztec Press at 520-206-6800. Pima also has a literary magazine. Students interested may enroll in WRT 162-Literary Magazine Workshop. The workshop annually publishes SandScript, which contains literary pieces, including those from students, faculty and staff. The magazine also sponsors an annual art contest for its cover and center pages.

## Sports – Intercollegiate Athletics

Pima Community College is a member of the Arizona Community College Athletic Association, National Junior College Athletic Association (NJCAA), and the NJCAA Region 1. The NJCAA sets the rules for who can participate (eligibility requirements). The basic requirements are that the athletes be full-time enrolled students, be making progress in their studies (satisfactory academic progress), and that each person has received medical clearance to participate. Pima competes in a variety of sports, including baseball (men), basketball (men and women), cross-country (men and women), football (men), golf (men and women), soccer (men and women), softball (women), tennis (men and women), track and field (men and women), and volleyball (women).

## Student Housing

Pima Community College does not own or operate student housing, either on campus or in the community. However, students can receive information about community agencies and organizations that provide housing by contacting any Student Life office.

## Drug Free Schools and Communities Act Information

Pima Community College is committed to the Drug Free Schools and Communities Act Amendments of 1989 (Public Law 101-226, 20 U.S.C. §1145g).

## Standards of Conduct

The unlawful possession, use, or distribution of illicit drugs and alcohol by students and employees is prohibited. The following misconduct is subject to disciplinary action, including exclusion, suspension, or expulsion:

1. Violating or failing to comply with published rules and regulations of conduct of the College that prohibit the unlawful possession, use, or distribution of illicit drugs and alcohol by



students and employees on College property or as part of any of its activities;

OR

2. Being under the influence of, using, selling, possessing, or distributing any illicit drugs or alcohol on College property or as part of any of its activities. This prohibition includes, but is not necessarily limited to, marijuana, any narcotic drug, hallucinogen, stimulant, depressant, amphetamine, barbiturate, abusable glue, aerosol paint, or other chemical substances. Over-the-counter drugs are excluded from consideration unless improperly used.

## Legal Sanctions

Local, state, and federal laws prohibit the unlawful possession, use, or distribution of illicit drugs and alcohol. Conviction for violating these laws can lead to imprisonment, fine, probation, and/or assigned community service. Students convicted of a drug and/or alcohol-related offense may be ineligible to receive federally funded or subsidized grants, loans, scholarships, or employment. Pima County Community College District will fully subscribe to and cooperate with the local, state, and federal authorities in the enforcement of all laws regarding the unlawful possession, use, or distribution of illicit drugs and alcohol.

## Health Risks

There are definite health risks associated with the use of alcohol and illegal substances. Students who experiment with drugs, alcohol, and illegal substances, or use them recreationally, may develop a pattern of use that leads to abuse and addiction. Use of alcohol and illegal substances is a major factor in accidents and injuries, and among persons between the ages of 18 and 24, it is responsible for more deaths than all other causes combined.

## Support Resources

College officials assist students with appropriate referrals and information concerning drug and alcohol education, counseling, treatment, or rehabilitation or re-entry programs that may be available in the community. Contact the Student Services Center on any campus for information.



# Student Code of Conduct

- I. Introduction
- II. Code Violations
- III. Code Sanctions
- IV. Due Process Procedures
- V. Immediate Suspensions
- VI. Student Behavior Assessment Committee
- VII. Miscellaneous Provisions

## I. Introduction

### A. Purpose

Pima Community College (the “College”) promotes the exchange of knowledge in an environment that encourages reasoned discourse, intellectual honesty, and respect for the rights of all persons. In support of this goal, the primary purpose of the following Student Code of Conduct (“Code of Conduct” or “Code”) is to educate and guide students to understand their responsibilities in regard to appropriate behavior and respect for others in the College community.

### B. Jurisdiction

This Code of Conduct governs all conduct of a College student that: (a) occurs on College property; (b) occurs at a College sponsored, sanctioned or supervised event or activity, regardless of the location of the event or activity and inclusive of travel, lodging and unscheduled time in between sessions of the event or activity; and/or (c) adversely affects the operation of the College, regardless of when or where the conduct occurs.

### C. Definitions

“College IT Systems” means College owned or controlled telephones, computers, software, network devices, servers, printers and other College owned or controlled technology equipment, including both hardware and software. This includes the College’s website “[pima.edu](http://pima.edu),” email with a pima.edu domain name, and/or email transmitted on College servers.

“Day” means normal College business day, not including Saturday, Sunday, any officially recognized College employee holiday, or any day the College is closed.

“VPSAE” means the Vice President of Student Affairs and Engagement at the College campus where an alleged Code of Conduct violation occurs, or a Vice President of Student Affairs and Engagement from another College campus designated to be responsible for the matter. If an alleged Code of conduct violation occurs in relation to an off-campus course or activity, VPSAE means the Vice President of Student Affairs and Engagement responsible for the off-campus course or activity or a Vice President of Student Affairs and Engagement from another College campus designated to be responsible for the matter.

“President” means the President at the College campus

where an alleged Code of Conduct violation occurs, or a President from another College campus designated to be responsible for the matter. If an alleged Code of Conduct violation occurs in relation to an off-campus course or activity, "President" means the President at the College campus responsible for the off-campus course or activity, or a President from another College campus designated to be responsible for the matter.

"SPG" means a College Standard Practice Guide. "Student" means a person who (1) has been charged with a Code of Conduct violation and (2) is either (a) admitted to the College as a student or (b) registered or participating in College continuing education classes.

#### **D. Questions Concerning Interpretation or Application of Code of Conduct**

Any questions that arise concerning the interpretation or application of this Code of Conduct should be addressed to the Assistant Vice Chancellor for Enrollment Management and Student Affairs or his/her designee.

## **II. Code Violations**

### **A. Academic Ethics Violations**

*A student shall not:*

1. Copy from another student's test/quiz paper or knowingly allow one's own test/quiz paper to be copied.
2. Use materials during a test/quiz that were not clearly authorized by the person giving the test/quiz.
3. Collaborate with another student during a test/quiz without permission.
4. Knowingly use, buy, sell, offer, transport, or solicit any of the contents of a test/quiz.
5. Take a test/quiz for another student or permit another student to take a test/quiz in one's place.
6. Bribe or attempt to bribe another person to obtain a passing grade or a better grade on a test/quiz or for a course.
7. Intentionally misstate facts or events on a graded exercise or assignment in a manner that affects the grade.
8. Engage in plagiarism, which includes representing the work of another person as one's own, including information downloaded from the Internet. The use of another person's words, ideas, or information without proper acknowledgement also constitutes plagiarism.
9. Obtain from or give to another student unauthorized assistance on any course work.
10. Compromise instructional and test/quiz materials by acquiring, using, or providing to others unauthorized instructional and/or testing/quizzing materials.

### **B. Violations Other Than Academic Ethics Violations**

#### **Disruption, Assault and Related Offenses**

*A student shall not:*

1. Disrupt any educational activity or process including, but not limited to, interrupting, impeding, or causing the interruption or impediment of any class, lab, administrative activity, or other College activity or event.
2. Disturb the peace of the College by, among other things, fighting, causing excessive noise, or engaging in indecent or obscene behavior.
3. Initiate, cause or contribute to any false warning or false report of a fire, explosion, emergency or crime.
4. Endanger, threaten to cause physical harm to, or cause actual physical harm to (a) another person, (b) College property, or (c) the property of another person. This section is intended to include (a) a student who threatens to cause harm to himself/herself and (b) all conduct or communications that a reasonable person would interpret as a serious expression of intent to cause physical harm to a person or damage to a person's property.

#### **Offenses Involving False Reports or Presentation of a False Document**

*A student shall not:*

5. Obtain College goods or services by making a false statement or by using or presenting a false or unauthorized document or a false identification card or paper.

#### **Tobacco, Alcohol and Drug Offenses**

*A student shall not:*

6. Smoke or chew tobacco in College buildings or other areas where such conduct is prohibited by law or College SPG 2303-AA.
7. Smoke or chew tobacco at a College event or activity that does not occur on College property when such conduct is not permitted at the event or activity.
8. Consume, transfer, sell, possess or be under the influence of an alcoholic beverage while (a) on College property or (b) at a College event or activity when such conduct is not permitted at the event or activity.
9. Consume, transfer, sell, possess or be under the influence of any controlled substance, illegal drug, or imitation controlled substance or possess legally prohibited drug paraphernalia. Notwithstanding the above, a student is not in violation of this Code provision if the student possesses or uses prescription medication that is prescribed to the student and is used only in conformance with the prescription.
10. Drive on College property or in connection with a College event or activity while under the influence of alcohol or drugs.

### **Offenses Involving College IT Systems (Computers, Networks and Telephones)**

#### ***A student shall not:***

11. Circumvent any College IT system security feature including hacking, probing, or attempting to break into other users' accounts.
12. In connection with a College IT system, obtain or use another person's account name, username or password unless specifically authorized to do so by a College administrator.
13. In connection with a College IT system, create, use or transmit a computer virus, worm, spyware or other type of malicious software.
14. In connection with a College IT system, allow another person to use one's account name, username or password unless specifically authorized to do so by a College administrator.
15. Alter, disrupt, or reconfigure any College IT system unless specifically authorized to do so by a College administrator. This prohibition includes
  - (a) the unauthorized introduction of any new hardware, software, network device or telephone on a College IT system;
  - (b) the unauthorized removal or reconfiguration of any College hardware, software, network device, or telephone from a College IT system; and
  - (c) the unauthorized running of an IT server, whether virtual or physical, on any College IT system network.
16. Use a College IT system to access, view, download, create, store, send, or forward sexually inappropriate materials of the type referenced in A.R.S. §38-448(A).
17. In connection with a College IT system, forge email or other electronic information or engage in any other conduct that is inappropriate or degrades the accuracy of student or other College data.
18. Engage in unauthorized access of any College IT system, any student data, or any other College data.
19. Access, view, download, create, store, send, or forward spam, pranks, pornographic or obscene images or words, or harassing, vulgar, threatening or intimidating messages on a College IT system.
20. Illegally download copyrighted material or violate any software license agreement or intellectual property rights in any College-related context.

### **Discrimination, Harassment, and Sexual Offenses**

#### ***A student shall not:***

21. Engage in discriminatory conduct against a member of the College community on the basis of age, ethnicity, gender, disability, color, national origin, race, religion, sexual orientation or veteran status.
22. Engage in sexual harassment against a member of the College community, including, but not limited

to, engaging in unwelcome physical and/or sexual contact or other conduct of a sexual nature that a reasonable person would know is unwelcome. Such conduct could include (a) repeated sexual advances, or propositions; (b) verbal harassment of a sexual nature, including lewd comments and/or sexual jokes or references; and/or (c) demeaning, insulting, intimidating, or sexually suggestive comments about an individual's dress or body. (See Board Policy BP1503.)

23. Engage in harassing conduct that a reasonable person would understand to be unwelcome or offensive, including, but not limited to, stalking or bullying. Stalking means following another person or making repeated contacts with another person in a manner that would cause a reasonable person to fear for their safety or the safety of their immediate family members or acquaintances. Bullying means engaging in conduct that involves physical assaults or threats of physical assault, intimidation, and/or harassment where the purpose or effect of the conduct is to exert dominance over another person.
24. Engage in any illegal sexual offense, including, but not limited to, sexual assault, public sexual indecency, or indecent exposure.

### **Offenses Involving Weapons**

#### ***A student shall not:***

25. Use, possess, display, or store any weapon, dangerous instrument, explosive material or device, fireworks, bomb-making materials or dangerous chemical on College property, or at a College activity or event, unless specifically authorized by (a) an Arizona or federal statute governing law enforcement officers; (b) a written document signed by the campus President in situations where the weapon, dangerous instrument, or dangerous material is used for an academic, law enforcement, or other legitimate purpose and the presence of the item does not present an undue risk to the College community; or (c) A.R.S. §12-781, which provides that a person may store or transport a legally possessed firearm inside that person's locked and privately owned motor vehicle or inside a locked compartment on that person's privately owned motorcycle. Such firearm must not be visible from the outside of the motor vehicle or motorcycle.

### **Property and Related Offenses**

#### ***A student shall not:***

26. Misuse, steal, misappropriate, or use or access without permission, property, data, records, equipment or services belonging to the College or to another person or entity.
27. Possess property one knows or has reason to believe is stolen or misappropriated.
28. Damage, destroy, or deface property, data, records or equipment belonging to the College or to another person or entity, including, but not limited to, taking down or defacing College authorized posters, handbills, or notices posted on College property, and damaging or defacing library materials.



29. Enter or occupy any College building, grounds, vehicle, or facility without proper authorization from a College employee to do so.
30. Block an entry to or exit from College property or a College event or activity without proper authorization from a College employee to do so.
31. Litter on College property or at a College activity or event.
32. Use, distribute, duplicate, modify, or possess any keys or pass cards issued for any building, facility, room, or other College property without authorization from the College to do so.

#### **Offenses Involving the Violation of a Local, State or Federal Law**

##### *A student shall not:*

33. Violate any local, state or federal law.
34. Violate the copyright laws. (See SPG Guide2701/AA Copyright Practice and Compliance.)

#### **Offenses Involving the Violation of a College or College-Related Policy, Regulation, Rule, SPG or Directive**

##### *A student shall not:*

35. Violate any College policy, regulation, or SPG.
36. Violate any College traffic or parking rule or regulation.
37. Fail to comply with the directions of College officials or agents, including law enforcement or security officers, acting in good faith in the performance of their duties. This includes failing to appear before a College administrator when directed to do so. This section is not intended to prohibit the lawful assertion of an individual's Fifth Amendment right against self-incrimination.
38. Violate any rule, regulation or standard of conduct that (a) is imposed by a College or College related club, team or organization of which the student is a member, or (b) applies to a College or College-related academic, athletic and/or other curricular or extracurricular activity or program if the student is participating in the activity or program.

#### **Offenses Related to Disciplinary Sanctions and Proceedings**

##### *A student shall not:*

39. Violate the terms of any disciplinary sanction imposed on him/her as a result of a Code violation.
40. Interfere with any College student or employee disciplinary process, including, but not limited to, tampering with physical evidence, providing false testimony at a disciplinary meeting or hearing, or requesting or inducing another person to provide false information or withhold information at a meeting or hearing.

#### **Miscellaneous Offenses**

##### *A student shall not:*

41. Fail to obtain approval from the Office of Student Life prior to
  - (a) posting or distributing information of any kind on College property or at a College event or activity;
  - (b) engaging in commercial solicitation on College property or at a College event or activity; or
  - (c) selling merchandise on College property or at a College event or activity unless specifically authorized by the College to do so.
42. Fail to reasonably supervise, and provide for the care of, a minor child in the custody or control of the student when the minor child is on College property or at a College event or activity.

#### **Misconduct and Conspiracy Offenses**

##### *A student shall not:*

43. Attempt to engage in conduct prohibited by this Code of Conduct. A student who engages in attempted misconduct can be disciplined to the same extent as if the student completed the prohibited act.
44. Join with others in a conspiracy to engage in conduct prohibited by this Code of Conduct. A student engages in a conspiracy when the student (a) agrees with others to engage in a plan or scheme that violates the Code and (b) undertakes one or more actions in furtherance of the agreement. A student who conspires with others to engage in conduct prohibited by the Code can be disciplined to the same extent as if the student alone engaged in the prohibited conduct, regardless of whether or not the conspiracy was completed.

## **III. Code Sanctions**

### **A. Definition of Sanctions**

Sanctions are disciplinary penalties that may be imposed on a student following a determination that the student has engaged in one or more Code violations described in section II. An exception to the above is an immediate suspension, which is a sanction that may be imposed prior to a determination that a Code violation has occurred.

### **B. Sanctions Determined on a Case-by-Case Basis**

The determination of what sanctions may be warranted in a given situation will be based on the specifics of that situation and the student's prior disciplinary record.

### **C. Employees Authorized to Impose Sanctions**

Employees authorized to impose sanctions include, and are limited to, the following:

1. An instructor may impose academic ethics sanctions for an academic ethics violation involving the instructor's course. (See subsection III (D).)
2. Vice President of Student Affairs and Engagement

(VPSAE) may impose sanctions other than academic ethics sanctions. (See subsection III(E).) A President may impose sanctions in an appeal decision. (See subsection IV(C).)

3. A College Department of Public Safety Officer (DPS Officer) may impose an immediate suspension, provided, however, that nothing in this paragraph is intended to restrict the Officer's traditional authority to protect the peace and/or enforce applicable criminal and traffic laws. (See section V.)

#### D. Academic Ethics Sanctions

Academic ethics sanctions mean either or both of the following:

1. **Warning:** A warning admonishes a student for an academic ethics violation and warns the student not to commit further violations. A warning must be in writing but does not become part of the student's permanent record.
2. **Loss of Credit or Grade Reduction on an Assignment:** A student may be given a lowered or failing grade (including a grade of zero or no credit) on an assignment, test/quiz or project which was the subject of an academic ethics violation.

#### E. Sanctions Other Than Academic Ethics Sanctions

Sanctions other than academic sanctions mean any one or more of the sanctions set out below. Where appropriate, a student may be subject to more than one sanction. For example a student may be on probation, have an obligation to pay restitution, and be on a behavior contract at the same time:

1. **Warning:** A warning admonishes a student for a Code of Conduct violation and warns the student not to commit further violations. A warning must be in writing but does not become part of the student's permanent record.
2. **Agreed-Upon Behavior Contract:** In situations where a student and VPSAE can agree on the consequences that should result from the student's Code of Conduct violation, the agreed-upon consequences can be set out in a document titled "Behavior Contract."
3. **Reprimand:** A reprimand admonishes a student for a Code of Conduct violation and warns the student not to commit further violations. A reprimand must be in writing and becomes part of the student's permanent record.
4. **Probation:** Probation is a written directive to comply strictly with the Code of Conduct for a specified period of time. A student on probation is permitted to continue with his or her coursework and attend College events and activities, but is warned that any further Code violation may result in the imposition of more severe sanctions, including possible suspension or expulsion.
5. **Immediate Suspension:** An immediate suspension is a suspension imposed by a VPSAE or College DPS Of-

ficer on a student prior to the student's receipt of due process procedures. (See section V.)

6. **Mandated Withdrawal:** A mandated withdrawal is a sanction where the student is withdrawn from a class or classes or from a College program. Withdrawal of a student from a College program can be for a specified amount of time not to exceed eighteen (18) months or can be permanent.
7. **Suspension:** Suspension is a sanction that, for a specified period of time, (a) requires a student not to be on any College campus or property; (b) excludes the student from all College academic courses and activities; and (c) prohibits the student from attending or participating in any College event or activity, regardless of location. A suspension shall not exceed eighteen (18) months in length. In appropriate situations, a limited suspension may be imposed. A limited suspension is one that restricts a student from some, but not all, academic classes. A suspension is a limited suspension only if it is expressly referenced as such in the decision that imposes the suspension. A student's readmission following a suspension may be conditioned on compliance with specified conditions.
8. **Expulsion:** Expulsion is the permanent exclusion of a student from (a) all College campuses and property; (b) all academic courses and activities of the College; and (c) the right to attend or participate in any College function or activity, regardless of location.
9. **Degree or Certificate Revocation:** Degree or certificate revocation is a sanction where the College revokes a degree, certificate or other academic recognition previously awarded by the College to a student. Notice of any degree revocation appears on the student's transcript. If the College previously communicated the award of a degree, certificate or other academic recognition to another person or entity, the College may provide notice of the revocation to that person or entity.
10. **Restitution:** Restitution involves the payment of monies to the College or to one or more persons, groups, or organizations to compensate the person(s), group(s), or organization(s) for damage to property or costs incurred as a result of the student's Code violation. Before requiring restitution in a Code matter that also involves separate criminal charges, a VPSAE shall consult with the Chief of Police.
11. **Access Restrictions:** Access Restrictions are restrictions on a student's ability to attend or access specific services, facilities, and/or extracurricular activities or events. An access restriction shall not include prohibiting a student from attending a class or classes in which the student is enrolled.
12. **Service and Related Activities:** A student may be required to complete an educational program at the student's expense, write a paper or letter of apology, or engage in community service appropriate to a specific Code violation.
13. **Administrative Hold:** An administrative hold is a sanction that precludes a student from registering,

receiving transcripts, or graduating until clearance has been received from a campus President or VP-SAE based on the student's completion of specified conditions, such as the return of property, completion of community service obligations, payment of restitution, etc. An administrative hold may only be imposed on a student in two circumstances. The first circumstance is when the student has received one of the following disciplinary sanctions: (a) an immediate suspension, (b) a suspension other than an immediate suspension that is scheduled to continue for more than three (3) days, (c) withdrawal of the student from a class or classes, or from a College program, (d) an expulsion, or (e) a degree or certificate revocation. The second circumstance is when a campus President or VPSAE determines, in the President or VPSAE's discretion based on the circumstances of a particular situation, that an administrative hold is warranted.

## IV. Due Process Procedures

### A. Incident Reports

1. **Reporting Alleged Code of Conduct Violations and Preparation of Incident Reports:** In the case of an emergency involving violent or threatening student conduct, including a student's threat to injure himself/herself, College employees, students, and visitors are strongly encouraged to immediately contact the College's Department of Public Safety (DPS) by dialing 206-2700 or 911.

In cases that do not involve an emergency, College employees, students and visitors may report a possible Code of Conduct violation by completing a College incident report form and notifying a VPSAE. An incident report form may be obtained in any VPSAE's office. Also an incident report form is attached. If allegations of misconduct are received by a VPSAE in any written form other than on an incident report form, the VPSAE shall transfer the relevant information to an incident report form. In addition, a VPSAE may independently initiate an incident report based on his/her communications with others or on written documents such as media reports, police reports, emails, letters, or other written documents.

2. **Contents of Incident Report:** An incident report should, to the extent reasonably possible, set out specific facts, including specific names(s), date(s), location(s) and descriptions of the alleged act(s) of misconduct.
3. **Time Limit:** An incident report should be submitted as soon as reasonably possible after alleged student misconduct occurs. Although there is no strict time limit after which an incident report may not be filed, an incident report that is submitted more than five (5) days after the alleged student misconduct may or may not be reviewed or otherwise processed, at the discretion of the VPSAE.
4. **Entry of an Incident Report and Resolution Thereof into the Code of Conduct Log:** Upon receipt or preparation of an incident report, the VPSAE shall within

twenty-four (24) hours enter the information into the Code of Conduct Log and check to see if there are any other disciplinary matters involving the student. Upon final resolution of the allegations referenced in the incident report, the VPSAE shall enter into the Code of Conduct Log how the disciplinary matter was concluded.

5. **Consultation with the College's EEO Office Concerning Certain Incident Reports:** The VPSAE shall consult with the College's EEO Office following the receipt or preparation of an incident report when: (a) the report includes allegations of discrimination, sexual harassment, or other type of harassment, or (b) the VPSAE reasonably believes that the student's alleged misconduct may be the result of a disability.
6. **Notice to Student Behavior Assessment Committee of Certain Incident Reports:** The VPSAE will provide a copy of an incident report to the Student Behavior Assessment Committee, with a copy to the President, in those matters identified in subsection VI (E) below.

### B. The Review Process

#### 1. Overview of Review Process

In the Review Process, the VPSAE determines whether a student has violated the Code, and if so, determines the sanction(s) to be imposed as a result of the violation(s).

#### 2. Review Process Procedures

The Review Process shall include the following:

- a. The VPSAE shall, within five (5) days of preparing an incident report or receiving an incident report, notify the student of the alleged misconduct and set a meeting (Review Meeting) with the student to discuss the allegations. The notice shall specify a time, date, and place of the Review Meeting. The specified meeting date shall be not less than two (2) nor more than five (5) days following the date the notice is sent to the student. Additional requirements concerning the notice are provided in subsections VII (A)&(B) below.
- b. Either prior to or following the Review Meeting, the VPSAE may conduct whatever additional review of the allegations of misconduct the VPSAE deems necessary.
- c. The student may be accompanied at the Review Meeting by a person who is a nonlawyer provided such person's attendance will not unreasonably delay the meeting.
- d. At the Review Meeting, the student shall be offered the opportunity to discuss with and/or present to the VPSAE any information the student desires concerning his/her version of the events related to the alleged misconduct.

#### 3. Review Decision

Within five (5) days following the conclusion of the Review Meeting, the VPSAE shall prepare and distribute a written decision (Review Decision) as follows:



- a. If the VPSAE is unable to conclude that the student violated the Code, the Review Decision shall so indicate and the Review Process shall be closed. Review Decision form attached.
  - b. If the VPSAE's determination is that the student engaged in misconduct, the Review Decision shall:
    - i. Specify the Code violation(s) and the sanction(s) being imposed.
    - ii. State that the student has the option of requesting an Appeal and describe how the student would file the appeal request in cases where an appeal is available to the student. Whether an appeal is available to the student is based on the type and severity of the sanctions being imposed. (See subsections IV (B)(4) & (5).) Review Decision form attached.
    - iii. State that the Review Decision is final in cases where an appeal is not available to the student. If an appeal is not available, see Review Decision form attached.
    - iv. State that the VPSAE reserves the option to modify his/her decision based on determinations or recommendations of the Student Behavior Assessment Committee in cases that have been referred to the Committee.
  - c. A copy of the Review Decision shall be provided to the student, the President, the Executive Director of Financial Aid and Title IV Compliance, and the Assistant Vice Chancellor for Enrollment Management and Student Affairs.
  - d. A copy of the Review Decision shall also be provided to the members of the Student Behavior Assessment Committee in cases that have been referred to the Committee.
- 4. Appeal of Review Decisions in Limited Situations**
- Following the Review Process, a student may request and is entitled to be provided an appeal only if one or more of the following sanctions were imposed as a result of the Review:
- (a) a suspension for more than fifteen percent (15%) of the class sessions for a course,
  - (b) mandated withdrawal of the student from one or more courses or a College program,
  - (c) an expulsion, or
  - (d) revocation of a degree or certificate previously awarded by the College. No additional appeal is available to a student if the Review Decision does not include any of the sanctions specified in this paragraph.
- 5. Procedure for Student to Request an Appeal**
- A student who is entitled to and desires to request an Appeal must file a written request in the President's office within five (5) days of the student's receipt of the Review Decision. The student's written request

must include a copy of the Review Decision. Failure of the student to request an Appeal within five (5) days of the Student's receipt of the Review Decision results in the Review Decision being final. An appeal form for student to complete may be obtained in the VPSAE's office.

**6. Process in Matters that have been referred to the Student Behavior Assessment Committee**

In cases where an Incident Report has been referred to the Student Behavior Assessment Committee, the VPSAE (a) may commence and continue the Review Process or (b) if recommended by the Chair of the Student Behavior Assessment Committee, may impose brief delays in the Review Process to accommodate actions/meetings of the Committee. In addition, in his/her Review Decision, a VPSAE may reserve the right to modify any sanction based on future determinations or recommendations of the Student Behavior Assessment Committee.

**C. The Appeal Process**

**1. Overview of Appeal Process**

The Appeal Process is available to a student when, and only when, a Review Decision imposes on the student one or more of the sanctions set forth in subsection IV(B)(4). In the Appeal Process, the President or his/her designee determines whether the student has violated the Code, and if so, determines the sanction(s) to be imposed as a result of the violation(s).

**2. Designation of Administrative Representative**

Within five (5) days of the President's receipt of a student's timely request for an Appeal, the President will designate an administrator (referred to as the "Administrative Representative") to assist in the processing of the Appeal Process. The Administrative Representative may or may not be the VPSAE.

**3. Notice to Student of Appeal Meeting**

Within five (5) days of the President's receipt of a student's timely request for an Appeal, the President will send written notice to the student and the Administrative Representative specifying the time, date and place of an Appeal Meeting. The specified meeting date shall be not less two (2) or more than five (5) days following the date the notice is sent to the student. Additional requirements concerning the notice are provided in subsections VII(A)&(B).

**4. Persons who May be Present at Appeal Meeting**

The student may be accompanied at the Appeal Meeting by a non-lawyer representative if the student so desires. (See subsection VII (F).) The following persons may be present during the entire Appeal Meeting: (i) the President, (ii) the student and, if applicable, the student's representative, and (iii) the Administrative Representative. Any other person may be in the Appeal Meeting only during the time that he/she is presenting information to President.

## 5. *Presentation of Information to the President at the Appeal Meeting*

The President shall preside at the Appeal Meeting. At this meeting, both the Administrative Representative and the student shall be provided a reasonable opportunity to present information to the President with respect to (1) whether the student violated the Code, and (2) if a Code violation has occurred, what sanction(s) are warranted. The presentation of information to the President will occur in the following manner:

- a. The President shall inform all persons present at the Appeal Meeting that they are expected and required to be truthful, cooperative and respectful.
- b. The Administrative Representative will present information to the President first. The information may include (1) statements made by the Administrative Representative himself/herself; (2) statements of persons that the Administrative Representative chooses to bring to the meeting; and/or (3) the presentation of written documents (which may include written statements of persons who may or may not be present at the meeting). A copy of any written document provided to the President shall also be provided to the student. The student and President shall be permitted to ask clarifying questions of any person who presents information to the President during this portion of the Appeal Meeting.
- c. At the conclusion of the Administrative Representative's presentation of information, the student will then have the opportunity to present information to the President. The information may include (1) statements made by the student himself/herself; (2) statements of persons that the student chooses to bring to the meeting; and/or (3) the presentation of written documents (which may include written statements of persons who may or may not be present at the meeting). A copy of any written document provided to the President shall also be provided to the Administrative Representative. The Administrative Representative and President shall be permitted to ask clarifying questions of any person who presents information to the President during this portion of the Appeal Meeting.
- d. At the conclusion of the student's presentation of information, the Administrative Representative shall be given a brief opportunity to present additional information to respond to information provided by the student. The student and President shall be permitted to ask clarifying questions of any person who presents information to the President during this portion of the Appeal Meeting.
- e. Following the presentation of information described above, the Administrative Representative and student will each be allowed to present a brief concluding statement that summarizes the information presented and contains that person's recommendations concerning possible sanctions.

## 6. *Appeal Decision*

Within five (5) days following the conclusion of the Appeal Meeting, the President shall prepare and distribute a written decision (Appeal Decision) as follows:

- a. If the President is unable to determine that the student violated the Code, the Review Decision shall be rescinded and the Appeal Process shall be closed.
- b. If the President determines that the student violated the Code, the Appeal Decision shall:
  - i. Specify the Code violation(s) and the disciplinary sanction(s) being imposed. Any sanction(s) being imposed may be the same as, or may be more or less severe than, the sanction(s) contained in the Review Decision.
  - ii. Indicate, if applicable, that the Appeal Decision is final. An Appeal Decision is final unless one of the sanctions being imposed is expulsion or the permanent withdrawal of the student from a College program.
  - iii. Indicate, if applicable, that the Appeal Decision will be reviewed by the Provost in the manner specified in subsection IV(C)(7). An Appeal Decision will be reviewed by the Provost if one of the sanctions being imposed is expulsion or the permanent withdrawal of the student from a College program. A copy of the Appeal Decision shall be provided to the student, the Administrative Representative, the VPSAE, the Executive Director of Financial Aid and Title IV Compliance, and the Assistant Vice Chancellor for Enrollment Management and Student Affairs. If the discipline imposed includes expulsion or the permanent withdrawal of the student from a College program, a copy of the Appeal Decision shall also be provided to the Provost. A copy of the Appeal Decision shall also be provided to the members of the Student Behavior Assessment Committee in cases that have been referred to the Committee.

## 7. *Provost Review of Decisions that Include Expulsion or Permanent Withdrawal from a College Program*

Unless the discipline imposed in an Appeal Decision includes expulsion of the student or the permanent withdrawal of the student from a College program, the President's Appeal Decision is final. An Appeal Decision that includes expulsion or the permanent withdrawal of the student from a College program shall be reviewed by the Provost. The Provost's review shall include a discussion with the President and, in the discretion of the Provost, a discussion with the student and Administrative Representative (either separately or at the same time). The Provost shall, within ten (10) days of his/her receipt of the President's decision, issue a written decision either confirming or declining to confirm the portion of the Appeal Decision that involves expulsion or permanent withdrawal of the student from a

College program. If the Provost declines to confirm the portion of the Appeal Decision that involves expulsion or permanent withdrawal of the student from a College program, the Provost shall refer the matter back to the President that issued the decision and indicate that the President should issue a revised Appeal Decision that does not include expulsion or permanent withdrawal of the student from a College program. A copy of the Provost's decision shall be provided to each person who received a copy of the Appeal Decision.

#### **D. Procedures Related to Imposition of Academic Ethics Sanctions by an Instructor**

##### **1. Sanctions available to an Instructor for Academic Ethics Violations**

An instructor may impose academic ethics sanctions against a student who has committed an academic ethics violation in relation to the instructor's course. Academic ethics sanctions include (a) a written warning and/or (b) a lowered or failing grade (including a grade of zero or no credit) on the assignment, test/quiz or project which was the subject of the academic ethics violation. If the instructor believes that additional or different sanctions should be imposed against the student (such as suspension, withdrawal of the student from the instructor's course, expulsion, etc.), the instructor may file an incident report pursuant to subsection IV (A).

##### **2. Requirement for Instructor to Meet with the Student**

Prior to making a final decision whether to impose academic sanctions against a student suspected of committing an academic ethics violation, an instructor shall meet with the student. The meeting should occur in a private setting. (If more than one student is involved in the alleged academic ethics violation, separate meetings will be held with each student.) During the meeting, the instructor shall inform the student of the specifics of the alleged academic ethics violation and allow the student an opportunity to present his/her side of the story.

##### **3. Instructor's Decision**

Within two (2) days following the conclusion of the meeting with the student, the instructor shall prepare and distribute a written decision (Instructor's Decision) as follows:

- a. If the instructor is unable to conclude that the student committed an academic ethics violation, the Instructor's Decision shall so indicate and the matter shall be deemed concluded.
- b. If the instructor's determination is that the student committed an academic ethics violation, the Instructor's Decision shall (i) describe the academic ethics violation and the academic ethics sanction(s) being imposed, and (ii) inform the student that the student may seek a review of the Instructor's Decision by means of the College's Grade Complaints from Students process. Decision by Instructor to Impose Academic Sanctions form attached.

The instructor shall provide a copy of his/her Instructor's Decision to the student and the Vice President of Instruction at the applicable campus.

##### **4. Review of Instructor's Decision**

A student may request a review of an Instructor's Decision to impose academic ethics sanctions by means of the College's Grade Complaints from Students process found at the College's website at [www.pima.edu/current-students/complaint-processes/grade-related-complaints.html](http://www.pima.edu/current-students/complaint-processes/grade-related-complaints.html).

## **V. Immediate Suspension**

### **A. Requirements for Imposing an Immediate Suspension**

A VPSAE or College DPS Officer may, without prior notice to the student, impose upon the student an immediate suspension if there are reasonable indications that: (1) the student may present an unreasonable risk of danger to himself/herself or others, or (2) the student's presence on College property poses a significant risk of disruption of educational activities. If an immediate suspension is imposed, the employee imposing the suspension shall promptly file an incident report. The VPSAE shall promptly proceed with the Review Process (see subsection IV (B)) and shall review whether the matter should be referred to the Student Behavior Assessment Committee. (See section VI.)

### **B. Notice to Student of Immediate Suspension**

A VPSAE or DPS Officer who imposes an immediate suspension shall give the student oral or written notice of the immediate suspension and the reasons therefore as soon as reasonably possible. If the initial notice is oral, written notice of the immediate suspension and the reasons therefore will be given to the student within two (2) days.

### **C. Discretion to Allow Continuation of Course Work**

In cases involving an immediate suspension, the VPSAE may, in the VPSAE's discretion, allow the suspended student to continue his/her course work by means of email communications and/or independent study.

### **D. Duration of an Immediate Suspension**

An immediate suspension will remain in effect until (1) a final decision has been made concerning the alleged Code violation(s), or (2) the VPSAE determines that the reasons for imposing the immediate suspension no longer exist.

### **E. No Review of an Immediate Suspension**

A VPSAE or DPS Officer's decision to impose an immediate suspension is not subject to review. Once an immediate suspension is imposed, however, the Review Process, and, if applicable, the Appeal Process, shall proceed promptly and no extensions of time in either such process shall occur unless the student makes a

written request to the VPSAE or President for an extension or extraordinary circumstances exist justifying an extension.

## VI. Student Behavior Assessment Committee

### A. Purpose

The College seeks to promote a safe environment where students and employees may participate in the educational process without compromising their health, safety or welfare.

### B. Formation and Members of Student Behavior Assessment Committee

A Student Behavior Assessment Committee shall be formed and shall be comprised of the following members:

1. A Vice President of Student Affairs and Engagement;
2. A licensed clinical psychologist or psychiatrist (who may or may not be a College employee);
3. A representative from the College's Department of Public Safety;

The Chancellor shall designate generally who shall serve as the Chair of the Committee, and may modify such designation in a particular case.

If at any particular point in time one or more members of the Student Behavior Assessment Committee are not reasonably available, the Committee may operate with the remaining members that are available.

### C. Referring a Matter to the Behavior Assessment Committee

Subject to section D below, a VPSAE, Campus President, the Assistant Vice Chancellor for Enrollment Management and Student Affairs, the Chief of Police, the Provost and/or the Chancellor may refer a matter involving a student to the Student Behavior Assessment Committee. Such referral may be made at any time, including but not limited at any stage of a Review or Appeal Process involving the student.

### D. Matters to be Referred to the Student Behavior Assessment Committee

The following matters shall be referred to the Student Behavior Assessment Committee:

1. Situations involving allegations of serious physical violence, threats of serious physical violence, or other threatening behaviors of a serious nature.
2. Situations involving allegations that the student has repeatedly engaged in disruptive conduct.
3. Situations where it reasonably appears that a student may present a danger to himself/herself or others.
4. Situations where it reasonably appears that a

student's behavior may be impacted by a mental health condition and the student's behavior is either (1) disruptive, (2) clearly distressed, or (3) seriously at variance from social norms.

### E. Student Behavior Assessment Committee may Consult with Others

The Student Behavior Assessment Committee may gather information about a given case and may consult and meet with such other persons as it deems appropriate. Such persons may include, but are not limited to, the College's legal counsel and/or a representative of the College's EEO Office.

### F. Authority of Student Behavior Assessment Committee

The Student Behavior Assessment Committee is authorized to make the following recommendations and determinations and take the following actions:

1. Require a student to provide a mental health clearance to the Committee. The Committee may also restrict a student from being on campus and/or attending College events or activities pending the receipt of a mental health clearance. If a Review Process has not been initiated and the student has not received a notice of an alleged Code of Conduct violation, the Committee must consult with legal counsel and obtain the authorization of the Chancellor or the Chancellor's designee prior to requiring the student to provide a mental health clearance to the Committee or restricting the student from campus and/or attending College events.

A mental health clearance is an opinion issued by a mental health professional indicating whether, in the opinion of the mental health professional, the student's presence on a College campus presents a danger to the student himself/herself or others.

2. Recommend to a VPSAE or President involved in a Review or Appeal Process: (a) what sanctions may be appropriate to impose if a student is found to have engaged in a Code violation; (b) whether to allow a student to withdraw and provide a mental health clearance to the Committee as a condition of returning to the College, and/or (c) whether to require a student to comply with other conditions recommended by the Committee.
3. Make such other recommendations and determinations as authorized by the Chancellor or the Chancellor's designee.

## VII. Miscellaneous Provisions

### A. Delivery of Notices and Decisions

Except for initial notice of an immediate suspension as described in subsection V (B), any notice or decision to be given to a student pursuant to these procedures shall be in writing and may either be (a) de-



livered personally to the student or (b) emailed to the student's [Pima.edu](mailto:Pima.edu) email account. Failure of the student to collect his/her email from his/her [Pima.edu](mailto:Pima.edu) email account does not render the notice ineffective.

If it is not reasonably possible to deliver notice to the student by one of the two methods set forth above, notice will be mailed by regular mail to the student's home or local address as referenced in the College's records. In such cases, unless the student agrees otherwise, the meeting will be scheduled not less than four (4) nor more than ten (10) days after the date of mailing of the notice of the meeting. Notices intended to be hand delivered by a student to a College office or a College administrator must be delivered during the College's normal working hours.

## **B. Contents of Notices of Review and Appeal Meetings**

Notice to a student of an upcoming Review or Appeal Meeting shall include:

1. A reference to the Code provision(s) alleged to have been violated by the student.
2. A description of the alleged conduct in violation of the Code, including a summary of the specific facts, and the names(s), date(s), and location(s) that are reasonably necessary to describe the alleged conduct.
3. The time, date and place of the meeting.
4. The name and email address of the VPSAE or President that will conduct the meeting.
5. A statement that a final decision will not be made concerning whether the student engaged in the alleged misconduct until the student has had an opportunity at the meeting to (a) tell his/her side of the story and (b) comment on the issue of sanctions that would be appropriate to impose if it is determined that the student violated the Code.
6. A reminder to the student that if the student is receiving financial aid, the imposition of a disciplinary sanction might adversely affect financial aid the student has already received or the student's ability to continue to receive financial aid.
7. In cases where an immediate suspension has been imposed, a statement as to whether the VPSAE has, in his/her discretion, decided to allow the student to continue his/her coursework by means of email communications and/or independent study.
8. A reference to the College website address for the Student Code of Conduct.

## **C. Assistance Available to Students with Disabilities**

If a student believes he/she needs an ADA accommodation to participate in a Code of Conduct process, the student should contact the College's ADA Coordinator.

## **D. Student Who Cannot be Contacted to Schedule a Meeting, Who Fails to Cooperate in the Scheduling of a Meeting, or Who Fails to Appear at a Scheduled Meeting**

If a student (1) cannot be contacted in the manner described by subsection VII (A) to schedule a Review Meeting, (2) fails to cooperate in the scheduling of a Review Meeting, or (3) fails to appear at a scheduled Review Meeting, the VPSAE can proceed with the Review Meeting and issue a Review Decision. A student who (1) cannot reasonably be contacted to schedule an Appeal Meeting (2) fails to cooperate in the scheduling of an Appeal Meeting, or (3) fails to appear at a scheduled Appeal Meeting, will be deemed to have abandoned his/her appeal and the Review Decision shall be enforced.

## **E. Authority of Chancellor to Assign an Alternate Decision Maker—Situations Where a Decision Maker has an Actual or Potential Conflict of Interest**

The Chancellor may, for good cause, assign a different administrator to serve: (1) as the VPSAE in a Review Process, or (2) as the President in an Appeal Process. Good cause is determined in the discretion of the Chancellor and includes situations where a VPSAE or President may have an actual or potential conflict of interest in his/her role as a decision maker in a Review or Appeal Process. A VPSAE or President who may have an actual or potential conflict of interest in a student discipline matter shall inform the Chancellor of the conflict as soon as possible after the conflict arises.

## **F. Right of Student to be Accompanied by Someone Other than an Attorney at a Disciplinary Proceeding**

In any Review or Appeal Meeting, the student may be accompanied by a non-lawyer. Such person may provide advice to the student during the proceeding but may not actively participate in the proceeding. Notwithstanding the above, if the student is less than 18 years of age, the student may be accompanied by a custodial parent or legal guardian at a Review or Appeal Meeting and the parent or guardian may assist the student by actively participating in the meeting. The fact that a parent or guardian actively participates in and assists a minor student at a Review or Appeal Meeting does not negate or limit the requirement of the student to answer questions posed to him/her at such a meeting.

## **G. Burden of Proof Concerning Alleged Student Misconduct**

In any Review or Appeal Process, the standard to be applied is the "preponderance of the evidence" standard. Under this standard, the VPSAE or President is authorized to impose discipline if the information available to the decision maker indicates that the student more likely than not committed the alleged Code violation.

## H. Conduct of Review and Appeal Proceedings

The formal rules of evidence do not apply to Review and Appeal Meetings. At any such meeting, however, the VPSAE or President, as applicable, may exclude irrelevant, immaterial, privileged or unduly repetitious information. In addition, the VPSAE or President may impose reasonable time limits with respect to the presentation of information.

## I. Recording of Review and Appeal Proceedings

Review Meetings shall not be recorded. Recording of an Appeal Meeting will only occur if (1) the President, in his/her discretion, requests that the meeting be recorded, (2) recording is determined to be an appropriate accommodation for a disabled student, or (3) the student arranges for such recording to occur at the student's own cost. If at the President's direction an Appeal Meeting is recorded, the student may request that the recording be transcribed, or that the recording be copied, but a transcript or copy of the recording shall not be prepared or provided to the student unless the student pays, in advance, the estimated cost of such transcript or copy. A student will not be required to pay for the transcription or copy of a recording that is made as a disability accommodation.

## J. Minor Errors

Minor errors made in the application of this Code of Conduct, including minor procedural or timeline errors, shall not invalidate an ongoing disciplinary process or invalidate any discipline that has been imposed unless such errors are determined to be prejudicial to the legal interests of the student.

## K. Modification of Timeline for Good Cause

A VPSAE in any Review Process, or the President in any Appeal Process, may for good cause modify a timeline set forth in these procedures. In situations where an immediate suspension has been imposed, a delay of any timeline shall occur only if the student submits a written request to the VPSAE or President, as applicable, for an extension or extraordinary circumstances exist justifying the extension.

## L. Limited Consideration of a Student's Prior Disciplinary Record

In a Review or Appeal Process, information regarding a student's prior disciplinary record may be presented to and/or reviewed by the VPSAE or President, as applicable, but such information shall not be considered relevant on the issue of whether the student engaged in the alleged misconduct. The student's prior disciplinary record may be considered by the VPSAE or President only with respect to the issue of determining appropriate sanctions to impose if the student is found to have committed a Code violation.

# Educational Options





## Introduction

To meet the diverse needs of students, Pima Community College offers a variety of ways for students to reach their educational goals. Students can choose from traditional, alternative-style, or accelerated classes. These classes cover many subject areas and fulfill degree and certificate requirements. Students can take classes to transfer to a four-year institution, prepare for job training, or continue their education in an area of special interest.

These classes are provided days, evenings, and weekends. Evening classes begin at 4:30 p.m. or later. Classes are offered at all PCC campuses and learning centers, as well as more than 100 off-campus sites, including Davis-Monthan Air Force Base, public schools, and neighborhood centers in Pima County.

## Traditional-Style Classes

PCC offers traditional-style classes in which students are required to attend lecture and/or lab on specified days and times. Regular classes run for 16 weeks during fall and spring semesters. Some classes include in-class computer usage.

## Alternative-Style Classes

PCC also offers alternative-style classes that provide students with different teaching methods or within different time frames. These classes are designed to fit students' learning styles and scheduling needs and include:

- Express Format – Students attend class one night a week for five or six weeks; completing appropriate Express classes year-round for two years can lead to an associate degree.
- Honors Content – This course may be taken for Honors credit, with additional work expected of the student beyond regular course requirements.
- Online – Classes taught via the Internet.
- Open Entry/Open Exit – Students enroll at any time during the semester and complete required work at their own pace within the semester or by arrangement with the instructor. Full academic credit classes only.
- Self-Paced Independent – Students work off-campus at their own pace, with study materials prepared by College faculty. Students must meet with faculty for the initial class at the time and room defined in the class schedule.
- Self-Paced on Campus – Students work on-campus each week at their own pace, in the room defined in the class schedule, with faculty guidance. Students must meet with faculty in the room defined during the first week of classes.
- Classroom and Online – Students receive instruction in the classroom and via the Internet with reduced time in the classroom.
- Web Self-Paced – Students work via the Internet at their own pace with materials provided by College faculty via the Internet.

*Note:* All Self-Paced courses must be completed by the end of the semester in which they are taken.

## Workplace Learning Classes

A workplace learning course is one in which the student applies concepts and practices learned previously or concurrently to facilitated observation and/or practical work situations, on- or off-campus, within a field related to the discipline. These experiences may also be referred to as cooperative education, practicum, clinicals, field experience, internship, or externship. All workplace learning courses are supervised by the College, have an assigned instructor, and class attendance is tracked on a weekly basis.

## Honors Program

The Honors Program provides students enriched learning opportunities and programming activities to foster academic and social development. It features an enhanced curriculum where students can expand their intellectual capabilities, develop creativity, and practice leadership skills. The primary goals of the Honors Program are to encourage leadership and community service opportunities and to facilitate entry into Honors Programs at four-year colleges. The Honors Program features small class sizes, assistance for students seeking scholarships and awards, and a strong support network among students, faculty, and staff.

To graduate from Pima Community College with an Honors designation, students must complete a minimum of 15 credit hours of honors courses and maintain a cumulative GPA of 3.5. The Honors 101 Colloquium (3 credits) is a required course in this 15-credit minimum. HON 101 must be completed with an A or B grade.

### Admission Criteria

Details about the criteria to join the Honors Program, as well as program requirements and Honors contacts, are at [www.pima.edu/honors](http://www.pima.edu/honors). For information about other honors societies, see Phi Theta Kappa.

## Distance Learning – PimaOnline – Online Education

With an ever-increasing number of PCC courses in many subject areas available online, you can receive an excellent education no matter where you live or work.

### Is Online Education for Me?

But is online education for you? Here are some things to consider before you register.

Online courses:

- require self-discipline. Time and space management are keys to your success in an online education environment.
- often may require more time than site-based courses.
- require you to be highly interactive.
- require you to log in the first day of class and participate frequently.
- require moderate computer and Internet skills.

### Find an Online Class

Complete online schedules for PCC classes (online, traditional,



self-paced and more) by semester and subject are available on the Class Schedules webpage.

### Log in to MyPima

You will access your online classes by logging into MyPima. A convenient icon is located on the PCC homepage.

### Find your course homepage

To find the homepages for all of your classes

- log into MyPima
- select the Academics tab
- select My Courses
- select your course title

Note: Online class homepages are usually not available until the first day of class.

### Hardware and Software Checklist

You will need to have access to and be familiar with the following hardware and software in order to successfully complete an online class. Specific information about operating systems, software, browsers and mobile device support is available on the PimaOnline webpage, [www.pima.edu/pima-online](http://www.pima.edu/pima-online).

### Internet Proficiency

- You should have some experience with browsing the Internet and sending and receiving email with attachments.
- If you do not already have some Internet and email experience, you may want to consider completing an Internet introductory course prior to enrolling in an online class.

### Places to Access the Internet

If you do not have Internet access at home,

- the open-access computer labs on all of PCC's campuses and centers have computers with Internet access
- many local libraries also have computers with similar access.
- ask your friends and neighbors if you may borrow a computer or do your work from their home.

### Registering for an Online Class

You may register for an online class just as you would a traditional class. Go to MyPima, or visit any Pima campus or center.

- Before you can register for a class you must enroll as a PCC student.
- After you are enrolled you may register for classes.

### Accessing Your Class

You will access your online classes by logging into MyPima located on the College homepage. Learn more about accessing your course homepage through MyPima.

### Setting Up an Email Program

- Your MyPima student email account is already set up for you.

### Other Course Materials You May Need

- Most online classes require you to purchase textbooks. Textbooks can be purchased through PCC bookstores. You can learn what textbooks are required for classes through the online class schedules or, after you have registered for the class, you can check your Book List channel in MyPima.
- Some of your classes may require specific software, lab kits,

study aides or audio tapes.

- The cost of supplemental materials is an additional cost beyond the cost of the class.
- The online syllabus provided by your instructor will explain any materials you will need for your class and where to find them.

### Course Content

- Course curriculum is identical to face-to-face classes. Only the mode of delivery and activities will vary.

### Submitting Class Assignments

- Submission of assignments varies by class.
- Most assignments will be submitted by Internet using the Desire2Learn platform, or by email attachments.
- Some assignments may need to be mailed or faxed.
- The course syllabus will provide specific directions about how to submit assignments.

### Deadlines and Timelines

- Yes, there will be deadlines just as in traditional classes.
- Timelines will vary according to each class.
- Review your class assignment schedule for specific due dates.

### Exams

Some instructors give quizzes and exams, while others will use other modes of assessment. Review your class syllabus for specific information.

- For classes that require quizzes and exams, some may be done online while a few may have to be done in person. Review your class syllabus for details.
- If you find it impossible to come to campus for an exam, inform your instructor. Your instructor will work with you to make other arrangements for similar security.

### Costs for Online Classes

- Tuition for online classes is the same as face-to-face classes.
- You will need to pay for an Internet Service Provider, if you are accessing the class from a home computer.
- Additional supplemental materials and fees vary by class. Check the College catalog, semester schedule or class syllabus.

### Library Services

- Pima's Library Services offer online library resources. Log in to MyPima and click on the Library tab to access online reference resources and databases.

### Counseling/Advising Services

- The College provides online advising to assist online learners.
- You can quickly contact an advisor to find the additional information you may need to be successful.

### Need technical help accessing your course?

For technical questions about logging in to MyPima or accessing your D2L course homepage, contact the MyPima HelpDesk 24 hours-a-day, 7 days-a-week. Please note that D2L course homepages "go live" on the first day of the class.

- Call 520-206-4800
- Email: [mypimahelpdesk@pima.edu](mailto:mypimahelpdesk@pima.edu)

## **Username and Passwords**

You will access your online classes by logging into MyPima located on the College homepage. Learn more about setting up your MyPima account and finding your course homepage.

If you cannot access your online course homepage on the first day of class, contact us at [pimaonline@pima.edu](mailto:pimaonline@pima.edu) or call 520-206-6310.

## **Pop-up Windows**

Many personal firewall programs have features that prevent pop-up windows.

- Pop-up windows are used in Desire2Learn.
- When using Desire2Learn you will have to enable the pop-up window feature of your program.
- For information about enabling the pop-up window feature, consult the user manual or Internet site for the firewall program you are using.

## **Browser plug-in error messages**

Desire2Learn class materials may use various multimedia formats such as sound and videos. These require additional sub-programs called browser plug-ins. Instructions for installing the most common plug-ins are provided in the Browser Tune-up section on the Desire2Learn commercial site.

# Earning a Degree or Certificate





## Degree, Certificate, and Graduation Requirements

Pima Community College offers certificates and degrees in a variety of areas. Each certificate and degree has specified program requirements for graduation. See certificate and degree displays for specific program requirements. The certificates and degrees are displayed alphabetically beginning with Accounting.

Each program display lists the required coursework and credits. A degree may be awarded with fewer than the number of credits shown in the program display as long as the student has completed the required coursework and a minimum of 60 credit hours numbered 100 or higher. A certificate may be awarded with fewer than the number of credits shown in the program display as long as the student has completed the required coursework.

Note to Title IV Financial Aid Recipients: Some degrees and certificates display a range of credits needed to complete the program. Once a student completes the specific course requirements and has met the minimum number of credits in the range, the student will no longer be eligible for Title IV funds for that program.

## Earning a Degree or Certificate

Earning a certificate or degree requires fulfilling all requirements defined below.

Students are responsible for determining the presence or absence of any barriers to professional licensure or certification outside of College awarded completion documents. If students have concerns about any non-educational barriers to professional licensure or certification, they are advised to seek academic advising to explore that possibility before beginning their course of study.

### Programs with Special or Selective Admissions

Certain programs of study may have additional admissions requirements that must be met in order to be admitted into the particular program. These additional programs may include: taking assessments and/or completing prerequisite courses, attending a program orientation, completing an application, meeting a specified grade point average, and/or meeting non-academic requirements. See Educational Programs, Degree and Certificates to determine which programs are Selective Admissions and may have additional requirements for admission.

### Preparatory Coursework

Preparatory coursework may be required before beginning some programs. This coursework is in place to ensure that students have the skills and knowledge needed to be successful in the program. These courses may add a semester or more to the time needed to complete the certificate or degree. If a program has preparatory coursework it will be found in the program display.

## Program Requirements

### General Education Courses

General Education courses enhance the student's education and are required for graduation for all degrees and for certificates of 30 or more credits.

### Core/Major Courses

Core/major courses provide in-depth knowledge and/or skills in the student's chosen field of study. Core/major courses are required and are listed by program in the certificates and degrees section of the catalog.

### Support/Elective Courses

Support/elective courses expand the knowledge and skills beyond the core/major requirements and are usually in subject areas different than the core/major courses.

## Graduation Requirements

In order to graduate from Pima Community College, a student must:

1. Students who believe they are eligible to graduate should apply for graduation by completing a Graduation Application by the dates specified in this Catalog's academic calendar. If the student has met the necessary requirements he/she will be awarded a certificate or degree. If the student has not met requirements, he/she may reapply for graduation when the additional course requirements are met. Students applying for graduation more than three semesters after completion of program requirements must meet the catalog requirement under the term of graduation to comply with continuous enrollment rules. See the Student's Catalog of Record section for more information.
2. Apply for graduation within one year of completion of degree requirements. Students failing to do so must apply for an exception through the Office of the Registrar at the District Office and must complete a graduation application by the dates specified in this Catalog's academic calendar. Failure to complete the application by that date will result in a delay in processing until the following semester.
3. Complete the preparatory coursework if needed
4. Complete the General Education requirements appropriate to the certificate or degree.
5. Complete the program core and, if needed, the support course requirements for the certificate or degree.
6. Complete a minimum of 60 credit hours of course work at the 100 level or higher for an associate degree.
7. Complete the minimum number of credits in residency
  - a. At least 15 credit hours of degree requirements must be earned at PCC.
  - b. At least 6 credits of certificate requirements, including all the AGECE certificates, must be earned at PCC.
8. Have a minimum cumulative 2.0 grade point average (GPA) on a 4.0 grade point scale.
9. Complete courses given the following rules regarding grades:
  - a. A "C" grade or higher is required for general education and core courses, and for all courses in the Associate of General Studies degrees, transfer degrees (Associate of Arts, Associate of Business Administration, Associate of Fine Arts, and Associate of Science) and all AGECEs, unless a higher grade is specified.
  - b. "D" or "F" grades do not fulfill graduation requirements for any transfer degree (Associate of Arts, Associate of Business Administration, Associate of Fine Arts, Associate of Science and Associate of General Studies (AGS) or AGECE.
  - c. A grade of "P" cannot be used for Arizona General



Education Curriculum (AGEC) or any transfer degree (Associate of Arts, Associate of Business Administration, Associate of Fine Arts, and Associate of Science). The exception to this rule is for transfer courses for which a "P" grade is the only option available for students.

- d. A "D" grade may fulfill support course requirements only in certificates, the Associate of Applied Arts, and the Associate of Applied Science degrees, and only if those courses do not also meet general education requirements, or the program does not specify that a higher grade is required. See your program display.

## Graduation with Honors

Students who are graduating with a degree and who have completed 30 credit hours at Pima Community College may be granted honors designation if they meet certain grade point averages:

- 3.500 to 3.749 grade point average = Graduation with Honors
- 3.750 to 3.899 grade point average = Graduation with High Honors
- 3.900 to 4.000 grade point average = Graduation with Highest Honors

These designations will be shown on diplomas and listed on the student's official transcripts.

## Student's Catalog of Record

(Catalog Under Which a Student Graduates)

Students maintaining continuous enrollment at any public Arizona community college or university may graduate according to the requirements of the catalog in effect at the time of initial enrollment or according to the requirements of any catalog in effect during subsequent terms of continuous enrollment. Students may maintain continuous enrollment whether attending a public community college and/or public university in the state of Arizona.

The rules for maintaining continuous enrollment are:

- A semester in which a student earns course credit will be counted toward continuous enrollment.
- Noncredit courses, audited courses, failed courses, or courses from which the student withdraws do not count toward continuous enrollment.
- Failure to enroll in three consecutive regular (fall or spring) semesters breaks continuous enrollment for a student. Enrollment in the intervening summer terms may be used to maintain continuous enrollment status.
- If continuous enrollment is not maintained, the student must meet the requirements for graduation of the catalog in effect at the time they re-enroll or any subsequent catalog of continuous enrollment. Students enrolling or re-enrolled during a summer term must follow the following annual catalog or any subsequent catalog of continuous enrollment.

### Time Limit for Coursework

In areas of study in which the subject matter changes rapidly, material in courses taken long before graduation may become obsolete or irrelevant. Coursework that is more than eight years old is applicable to completion of certificate and degree requirements at the discretion of the student's major department. Departments may accept such coursework, reject it, or request that the student

revalidate its substance. The eight-year limit on coursework applies except when program accreditation agencies limit the life of coursework to less than eight years. Departments may also require students to satisfy current major requirements rather than major requirements in earlier catalogs, when completing earlier requirements is no longer possible or educationally sound. There is no time limit for General Education Courses.

## General Education Information

### The Value of General Education

General Education helps students to gain an understanding and appreciation of themselves; their history and culture; the history and culture of humanity; the principles and impact of mathematics, science and technology; and the principles of effective communication.

General education is designed to develop the following thinking skills: comparing, interpreting, summarizing, suggesting and testing hypotheses, imagining and creating, criticizing and evaluating, designing projects and investigations, gathering and organizing data, reasoning, problem solving, and decision making.

### Preparation for General Education

To succeed in general education courses, students will need to attain college-level preparedness in reading, writing and mathematics.

### General Education Requirements by Certificate or Degree

The following list shows the minimum General Education credits needed for each type of degree or certificate program offered at Pima Community College. When considering which type of program is best for you, please note that if you intend to transfer to a university to complete a Bachelor of Arts (BA), Bachelor of Fine Arts (BFA), or Bachelor of Science (BS), the Associate of Arts (AA), Associate of Business Administration (ABUS), Associate of Fine Arts (AFA), and the Associate of Science (AS) are the degrees designed for that purpose. The Associate of General Studies (AGS), Associate of Applied Arts (AAA), and the Associate of Applied Science (AAS) degrees require different General Education courses.

A student who provides transcripts documenting an earned bachelor's degree from a regionally accredited institution will have the general education requirements waived for a certificate or for an associate's degree as long as the student has a minimum of 60 credits applicable toward the degree, and has met all other graduation requirements. Any degree requirements which would apply toward both the prerequisite, major or support course requirements as well as general education requirements would still need to be met. If the student is pursuing a transfer degree, the degree would be awarded and the general education requirements would be waived, but the Arizona General Education Requirement (AGEC) certification would not be awarded.

## Transfer Degrees

### General Education Credits Needed

Associate of Arts (AA) .....	35
Associate of Fine Arts (AFA) .....	35
Associate of Business Administration (ABUS).....	35
Associate of Science (AS) .....	35

## Not Intended for Transfer

### General Education Credits Needed

#### Occupational Certificates:

Occupational Certificates of 30 or more credits .....	6
Occupational Certificates below 30 credits .....	0

#### Occupational Degrees:

Associate of Applied Arts (AAA) .....	19-21
Associate of Applied Science (AAS) .....	19-21
Associate of General Studies (AGS) .....	19-21

## General Education Requirements for Occupational Programs and the Associate of General Studies

This section covers the General Education requirements for the following certificates and degrees:

- Certificate for Direct Employment
- Associate of Applied Arts Degree (AAA)
- Associate of Applied Science Degree (AAS)
- Associate of General Studies Degree (AGS)

## General Education Requirements for Certificates for Direct Employment

### (30 Credit Hours or more)

Some programs require specific courses for general education. See program displays.

Requirements	Credit Hours
Communication Requirement.....	3
Analysis and Critical Thinking Requirement .....	3
The mathematics competency requirement must be met.	
Total General Education Credit Hours .....	6

### Communication Requirement (3 credits)

Choose 3 credit hours from the following list:

- CMN 102
- CMN 120
- GTW 101
- JRN 101
- OAP 151\*
- WRT 101 (or WRT 107)†
- WRT 154

\*No longer offered, but will fulfill the requirement.

† Suggested for students who may transfer.

### Analysis and Critical Thinking Requirement (3 credits)

Complete 3 credit hours from the categories listed below:

Note: The mathematics competency requirement must be met.

#### Mathematics Competency Requirement (0-3 credits)

The mathematics competency requirement can be met by:

- Any of the following cut scores on a Mathematics placement test
  - 85 or higher on the Accuplacer Elementary Math
  - 40 or higher on the Accuplacer College Level Math
  - 41 or higher on the Asset Elementary Algebra
  - 32 or higher on the Asset Intermediate Algebra
  - 32 or higher on the Asset College Algebra
  - 41 or higher on the Compass Math Algebra
  - 31 or higher on the Compass College Algebra
- OR
- Completing MAT 092, 095 or 097 with a "C" or better\*\*
- OR
- Completing Module 26 in MAT 089\*\*
- OR
- Completing 1-3 credits with a "C" or better from the Mathematics Category listed below

Note: Students who meet the Mathematics Competency Requirement by assessment, by completing MAT 092, 095 or 097, or Module 26 in MAT 089, or by completing Mathematics Category course work with fewer than 3 credits are still required to complete a total of at least 3 credits from the Analysis and Critical Thinking Requirement.

#### Mathematics Category

BUS 151 (if taken after Spring 2008)

GTM 105

TEC 113

Any mathematics (MAT) course at the 100 level or higher

#### Science Category

MAC 275

PHY 101\*

Any course from the AGEC Biological/Physical Science List†

#### Critical Thinking Category

PHI 120

REA 112

STU 200

TEC 101

† Suggested for students who may transfer.

\* No longer offered, but will fulfill requirement.

\*\* Credits earned in MAT 092, MAT 095, MAT 097, or Module 26-35 in MAT 089A/089B WILL NOT apply to general education, but completing one of these courses meets the math competency.

## General Education Requirements for AAA, AAS and AGS Degrees:

Courses may not be used to complete more than one category. Some programs require specific courses for general education. See program displays.

Requirements	Credit Hours
Communication Requirement.....	6
Analysis and Critical Thinking Requirement .....	6
The Mathematics Competency Requirement must be met.	
Humanities; Social Science; Leadership and Ethics Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
Total General Education Credits Required .....	19-21

### Special Requirement

One of the courses must meet either Cultural Diversity or Global Awareness criteria (C or G designation from the Arizona General Education Curriculum (AGEC) lists or a course from the Leadership and Ethics Category). The AGEC lists are found in the General Education Requirements for Transfer Programs following this section.

### Communication Requirement (6 credits)

Choose one of the following pairs:

- GTW 101 and CMN 120
- JRN 101 and CMN 120
- OAP 151\* and OAP 251\*
- CMN 102 and WRT 154
- CMN 120 and WRT 154
- WRT 101 (or 107) and CMN 120
- WRT 101 and 102 or WRT 107 and 108†

† Suggested for students who may transfer.

\* No longer offered, but will fulfill the requirement.

### Analysis and Critical Thinking Requirement (6 credits)

Complete 6 credit hours from the categories listed below.

At least one course must be completed from the Science or Critical Thinking Categories.

Note: The Mathematics Competency Requirement must be met.

#### Mathematics Competency Requirement (0-3 credits)

The mathematics competency requirement can be met by:

5. Any of the following cut scores on a Mathematics placement test
  - 85 or higher on the Accuplacer Elementary Math
  - 40 or higher on the Accuplacer College Level Math
  - 41 or higher on the Asset Elementary Algebra
  - 32 or higher on the Asset Intermediate Algebra
  - 32 or higher on the Asset College Algebra
  - 41 or higher on the Compass Math Algebra
  - 31 or higher on the Compass College Algebra

OR

6. Completing MAT 092, 095 or 097 with a "C" or better \*\*

OR

7. Completing Module 26 in MAT 089A or MAT 089B\*\*

OR

8. Completing 1-3 credits with a "C" or better from the Mathematics Category listed below

Note: Students who meet the Mathematics Competency Requirement by assessment, by completing MAT 092, 095 or 097, or Module 26 in MAT 089A or MAT 089B, or by completing Mathematics Category course work with fewer than 3 credits are still required to complete a total of at least 6 credits from the Analysis and Critical Thinking Requirement.

#### Mathematics Category

BUS 151 (if taken after Spring 2008)

GTM 105

TEC 113

Any mathematics (MAT) course at the 100 level or higher

#### Science Category

MAC 275

PHY 101\*

Any course from the AGEC Biological/Physical Science List†

#### Critical Thinking Category

PHI 120

REA 112

STU 200

TEC 101

† Suggested for students who may transfer.

\* No longer offered but will fulfill requirement.

\*\* Credits earned in MAT 092, MAT 095, MAT 097, or Module 26-35 in MAT 089A/089B WILL NOT apply to general education, but completing one of these courses meets the math competency.

### Humanities; Social Science; Leadership and Ethics Requirement (6 credits)

Courses must be completed from two of the following categories.

Courses may not be used to complete more than one of the categories listed below.

#### Humanities and Fine Arts Category

Any course from the AGEC Art list†

Any course from the AGEC Humanities list†

Any course from the AGEC Other Requirements Options: (c) Second Language list†

One of the following conversational language courses: SPA 106 or 107.

#### Social and Behavioral Science Category

Any course from the AGEC Social and Behavioral Sciences list†

Any course from the AGEC Other Requirement Options: (d) International and Multicultural Studies list†

#### Leadership and Ethics Category

Any course in this category meets the Cultural Diversity or Global Awareness requirement: ANT 253; BIO 250; BUS 148; MGT/STU 230



### Computer and Information Literacy Requirement (1-3 credits)

Completion of certain degree programs automatically fulfills this requirement. See your program display. Otherwise choose a course from the list below:

CAD 101; CIS 100\*, 104; CSA 100, 101\* or 104; FSC 189

† Suggested for students who may transfer.

\* No longer offered but will fulfill requirement.

## General Education Requirements for Transfer Programs

This section covers the General Education requirements for the following degrees:

- Associate of Arts Degree (AA)
- Associate of Fine Arts (AFA)
- Associate of Business Administration Degree (ABUS)
- Associate of Science Degree (AS)
- Arizona General Education Curriculum (AGEC)

The AGECE is a block of 35 or more credits and 11 or more courses that, when completed, can be transferred to meet all lower-division General Education requirements for bachelor's degrees at Arizona's public universities (Arizona State University, Northern Arizona University, and the University of Arizona). The AGECE may also meet other universities' General Education program requirements. At least six credits of AGECE coursework must be completed at Pima Community College to earn an AGECE at Pima. See an advisor or counselor for more information.

There are three AGECEs available: the AGECE-A for Associate or Bachelor of Arts or Fine Arts degrees, the AGECE-B for the Associate or Bachelor of Business Administration degrees, and the AGECE-S for the Associate or Bachelor of Science degrees.

### AGECE-A:

The AGECE-A may be applied to universities' Bachelor of Arts or Fine Arts degree programs. See the Liberal Arts Associate of Arts Degree for Transfer in this catalog for more information on choice of major and see an advisor or counselor to establish a degree plan using a university transfer guide.

### AGECE-B:

The AGECE-B may be applied to universities' business administration degree programs. See the Associate Degree in Business Administration (ABUS) for more information on this major and see an advisor or counselor to establish a degree plan and to be sure of the AGECE pathway. Also, an AGECE-B fulfills the requirements for an AGECE-A.

### AGECE-S:

The AGECE-S may be applied to universities' Bachelor of science degree programs. See the Associate of Science Degree for Transfer in this catalog and see an advisor to establish a degree plan and to be sure of the AGECE pathway. Also, an AGECE-S fulfills the requirements for an AGECE-A.

### If the AGECE is not completed before a student transfers to another community college or university:

- The student cannot complete an AA, AFA, ABUS, or AS degree.
- The student may be required to take additional general education courses at the college or university.
- The credits will be evaluated individually by the college or university using the Course Equivalency Guide and accepted depending on the degree requirements



## AGEC Categorical Requirements

The same course may not be used to complete more than one category, but it may meet both a category requirement and a Special Requirement. Request an AGECE checklist from an advisor for more detailed information. Per Arizona statewide policies, no course substitutions are allowed in the AGECE.

AGEC-A Categorical Requirements	Minimum Credit Hours
English Composition (2 courses) . . . . . The combination of WRT 101 and 102 (or WRT 107 and 108).	6
Humanities and Fine Arts (2 courses) . . . . . One course from the Art list and one course from the Humanities/Historical Perspectives list.	6
Biological & Physical Sciences (2 courses) . . . . . Any two lab science courses from the Biological & Physical Sciences list.	8
Mathematics (1 course) . . . . . MAT 141, 142, MAT 151, or any MAT course above 151.	3
Social & Behavioral Sciences (2 courses) . . . . . Any two courses from two different prefixes in this category.	6
Other Requirements (2 courses) . . . . . Courses from the Other Requirement Options, and/or one additional Humanities and Fine Arts, and/or one additional Social & Behavioral Science course.	6
<b>Total AGECE-A General Education Credits Required: . . . . .</b>	<b>35</b>

AGECE-B Categorical Requirements	Minimum Credit Hours
See the Associate Degree in Business Administration (ABUS) for more information.	
English Composition (2 courses) . . . . . The combination of WRT 101 and 102 (or WRT 107 and 108).	6
Humanities and Fine Arts (2 courses) . . . . . One course from the Art list and one course from the Humanities/Historical Perspectives list.	6
Biological & Physical Sciences (2 courses) . . . . . Any two lab science courses from the Biological & Physical Sciences list.	8
Mathematics (1 course) . . . . . MAT 212 or MAT 220.	3-5
Social & Behavioral Sciences (2 courses) . . . . . ECN 201 and a non-ECN course.	6
Other Requirements (2 courses) . . . . . CIS 120 and ECN 202.	8
<b>Total AGECE-B General Education Credits Required: . . . . .</b>	<b>37-39</b>

AGECE-S Categorical Requirements	Minimum Credit Hours
English Composition (2 courses) . . . . . The combination of WRT 101 and 102 (or WRT 107 and 108).	6
Humanities and Fine Arts (2 courses) . . . . . One course from the Art list and one course from the Humanities/Historical Perspectives list.	6
Biological & Physical Sciences . . . . . The combination of BIO 181IN & 182IN or CHM 151IN & 152IN, or PHY 210IN & 216IN.	8-10
Mathematics (1 course) . . . . . MAT 220 or above.	3-5
Social & Behavioral Sciences (2 courses) . . . . . Two courses from two different prefixes in this category.	6
Other Requirements (2 courses) . . . . . MAT courses above 220 and/or Science courses from the Biological and Physical Sciences list.	6
<b>Total AGECE-S General Education Credits Required: . . . . .</b>	<b>35-39</b>

### AGECE Special Requirements

Students are required to take courses that meet each of the following:

- Intensive Writing and Critical Inquiry
- At least one course beyond the First-Year Composition requirement shall involve the development of competence in written discourse and involve the gathering, interpretation, and evaluation of evidence. Please see the College catalog for courses which satisfy the Intensive Writing/Critical Inquiry (I) requirement.
- Cultural Diversity highlighting ethnic, race, and/or gender awareness (C)
- One course emphasizing ethnic/race/gender awareness is required.  
Please see the College catalog for courses which satisfy the (C) requirement.
- Global Awareness(G)

- One course emphasizing contemporary global/international awareness is required.  
Please see the College catalog for courses which satisfy the (G) requirement.

AGEC special requirements can be completed in one, two or three courses. Look for the AGEC special requirement code (I, C, and G) in the course lists below. To avoid exceeding the 35 - 39 credits required for the AGEC; the student should choose some courses that satisfy both the AGEC special requirements and the category requirements. For example, HUM 253 fulfills a category requirement of Humanities and Fine Arts and the three AGEC special requirements: Intensive Writing and Critical Inquiry (I), Cultural Diversity (C), and Global Awareness (G). See an advisor or counselor for help in selecting courses.

### AGEC Special Requirement Legend

- I** Satisfies Intensive Writing and Critical Inquiry Special Requirement
- C** Satisfies Cultural Diversity Special Requirement
- G** Satisfies Global Awareness Special Requirement

### AGEC Categorical Requirement: English Composition (6 credits)

Complete two courses, either the combination of WRT 101 and 102 or WRT 107 and 108.

Course Number	Course Title	Credit Hours	AGEC Special Requirement
WRT 101 or WRT 107	Writing I SUN# ENG 1101 Writing I for Non-Native Speakers of English	3	
WRT 102 or WRT 108	Writing II SUN# ENG 1102 Writing II for Non-Native Speakers of English	3	

\* ZTR - Courses transferred from another higher learning institution for which PCC does not have direct equivalent courses. These courses are evaluated by the Admissions and Records. WR refers to Writing.

### AGEC Categorical Requirement: Humanities and Fine Arts (6 credits)

Complete one course from the Art list and one course from the Humanities list.

#### Art List:

Course Number	Course Title	Credit Hours	AGEC Special Requirement
ART 100	Basic Design	3	
ART 105	Exploring Art and Visual Culture	3	G
ART 106	Survey of Painting Materials and Techniques (was ART 201)	3	
ART 110	Drawing I SUN# ART 1111	3	
ART 115	Color and Composition	3	
ART 120	Sculptural Design SUN# ART 1115	3	
DAR 250	Computer 2D Animation: Adobe After Effects	4	
DAR 251	Computer 3D Animation: Maya	4	
DAR 252	Interactive Design I	4	
MUS 102	Music Fundamentals	3	
MUS 108	Pima Jazz Band I	2	
MUS 109	Pima Jazz Band II	2	
MUS 111	Exploring Music Through Piano	3	
MUS 112*	Community Jazz Band	2	
MUS 113*	Community Jazz Band II	2	
MUS 116	Pima CC Orchestra	2	
MUS 117	Pima CC Orchestra II	2	
MUS 120	Concert Band I	3	
MUS 121	Concert Band II	3	
MUS 125†	Structure of Music I	3	
MUS 127†	Aural Perception I	2	
MUS 130	Chorale (SATB)	3	
MUS 131	College Singers (SATB)	3	
MUS 151	Exploring Music	3	
MUS 160	Popular Music in America	3	
THE 105	Theater Appreciation	3	C
WRT 205	Introduction to Poetry Writing	3	

**Art List: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
WRT 206	Short Story Writing	3	
ZTR** FA	AGEC Art Equivalent	3	
ZTR FAI	AGEC Art Equivalent	3	I
ZTR FAC	AGEC Art Equivalent	3	C
ZTR FAG	AGEC Art Equivalent	3	G
ZTR FAIC	AGEC Art Equivalent	3	I,C
ZTR FAIG	AGEC Art Equivalent	3	I,G
ZTR FACG	AGEC Art Equivalent	3	C,G
ZTR FAICG	AGEC Art Equivalent	3	I,C,G

† MUS 125 and MUS 127 together are equivalent to MUS 120A at the University of Arizona.

\* No longer offered, but will fulfill requirement.

\*\* ZTR - Courses transferred from another higher learning institution for which PCC does not have direct equivalent courses. These courses are evaluated by the Admissions and Records. FA refers to Fine Arts.

**Humanities List:**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
AIS 122 ††	Tohono O'odham History and Culture	3	I,C,G
AIS 124 ††	History and Culture of the Yaqui People	3	C,G
AIS 148 ††	History of Indians of North America	3	C,G
AIS 205 ††	Introduction to Southwestern Prehistory	3	C
AIS 206 ††	Contemporary Native Americans of the Southwest	3	C
ANT 112	Exploring Non-Western Cultures	3	I,C,G
ANT 135††*	Pre-Columbian Art	3	
ANT 148††	History of Indians of North America	3	C,G
ANT 205††	Introduction to Southwestern Prehistory	3	C
ANT 206††	Contemporary Native Americans of the Southwest	3	C
ARC 205††	Introduction to Southwestern Prehistory	3	C
ART 130	Art and Culture: Prehistory through Gothic SUN# ART 1101	3	I,G
ART 131	Art and Culture: Gothic through Modern Periods SUN# ART 1102	3	I,G
ART 134*	Arts of Diverse Cultures	3	G
ART 135††*	Pre-Columbian Art	3	
HIS 101	Introduction to Western Civilization I	3	I,G
HIS 102	Introduction to Western Civilization II	3	I,G
HIS 113	Chinese Civilization	3	G
HIS 114	Japanese Civilization	3	G
HIS 122††	Tohono O'odham History and Culture	3	I,C,G
HIS 124††	History and Culture of the Yaqui People	3	C,G
HIS 135††*	Pre-Columbian Art	3	
HIS 141	History of the United States I	3	C,G
HIS 142	History of the United States II	3	C,G
HIS 148††	History of Indians of North America	3	C,G
HIS 160	Latin America Before Independence	3	I,C,G
HIS 161	Modern Latin America	3	I,C,G
HIS 170*	History and People of Africa	3	G
HIS 274	The Holocaust	3	G
HIS 277 *	History of the Middle East: From the Rise of Islam to 1453	3	G
HIS 278*	History of the Middle East: From 1453 to the Present Age	3	G
HUM 110*	Humanities I	3	I
HUM 111*	Humanities II	3	I
HUM 251	Western Humanities I	3	I,G
HUM 252	Western Humanities II	3	I,G
HUM 253	Western Humanities III	3	I,C,G
HUM 260	Intercultural Perspectives	3	I,C
IDE 213*	History of Interior Architecture and Furniture from 1900–Present	3	G
LIT 224	Southwestern Literature	3	I,C
LIT 231	Introduction to Shakespeare	3	I
LIT 240	American Literature of Opposition	3	I,C

**Humanities List: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
LIT 260*	Major British Writers	3	I
LIT 261	Modern Literature	3	I,C,G
LIT 262	American Poets	3	
LIT 263	Postmodern Literature	3	I, C, G
LIT 265	Major American Authors	3	I
LIT 266 *	World Drama	3	I,G
LIT 267	World Literature: Narrative	3	I,G
LIT 268*	Introduction to the Literature of the Americas	3	I
LIT 274*	Native American Literature	3	I,C
LIT 280	Introduction to Literature	3	I,C,G
LIT 288*	Politics and the Novel	3	I
LIT 289	Literature and Film	3	I
MUS 151	Exploring Music	3	
MUS 160	Popular Music in America	3	
MUS 201	History and Literature of Music I	3	
MUS 202	History and Literature of Music II	3	
PHI 101	Introduction to Philosophy SUN# PHI 1101	3	
PHI 122	God, Mind, and Matter	3	
PHI 123	Philosophical Foundations of Science	3	
PHI 130	Intro. Studies in Ethics & Social Philosophy SUN# PHI 1105	3	
PHI 140††	Philosophy of Religion	3	
REL 130	Asian Religions	3	G
REL 140††	Philosophy of Religion	3	
REL 200	Religion in Popular Culture	3	C
REL 220	Old Testament	3	
REL 221	New Testament	3	
REL 234 *	Islam	3	G
REL 273 *	Judaism	3	C
THE 140	History of Theater to the 18th Century	3	
THE 141 *	History of Theater Since the 18th Century	3	
ZTR** HU	AGEC Humanities Equivalent	3	
ZTR HUI	AGEC Humanities Equivalent	3	I
ZTR HUC	AGEC Humanities Equivalent	3	C
ZTR HUG	AGEC Humanities Equivalent	3	G
ZTR HUIC	AGEC Humanities Equivalent	3	I,C
ZTR HUIG	AGEC Humanities Equivalent	3	I,G
ZTR HUCG	AGEC Humanities Equivalent	3	C,G
ZTR HUICG	AGEC Humanities Equivalent	3	I,C,G

\* No longer offered, but will fulfill requirement.

\*\* ZTR - Courses transferred from another higher learning institution for which PCC does not have direct equivalent courses. These courses are evaluated by the Admissions and Records. HU refers to Humanities.

†† This course is cross-listed with (the same as) another course – only one will apply to meet AGEC, degree or certificate requirements. The course description will indicate the cross-listed course.

**AGEC Categorical Requirement: Biological and Physical Sciences (8 credits)**

Complete two courses with their labs. See your degree display for selection of the courses.

Course Number	Course Title	Credit Hours	AGEC Special Requirement
ANT 105/105LB††	Humanity and the Environment	4	I
AST 101IN	Solar System	4	
AST 102IN	Stars, Galaxies, Universe	4	
AST 105IN	Life in the Universe	4	
BIO 100IN	Biology Concepts	4	
BIO 104IN	Animal Sexual Behavior	4	
BIO 105IN	Environmental Biology	4	
BIO 108IN	Plants, People, and Society	4	G
BIO 109IN	Natural History of the Southwest	4	
BIO 115IN	Wildlife of North America	4	



BIO 121IN	Current Issues in Human Biology	4	
BIO 127IN††	Human Nutrition and Biology	4	I
BIO 135IN	Genetics, Biotechnology and Human Affairs	4	
BIO 156IN	Introductory Biology for Allied Health	4	
BIO 160IN	Introduction to Human Anatomy and Physiology	4	
BIO 181IN	General Biology (Majors) I SUN# BIO 1181	4	
BIO 182IN	General Biology (Majors) II SUN# BIO 1182	4	
BIO 183IN	Marine Biology	4	
BIO 184IN	Plant Biology	4	
BIO 187IN *	Introduction to Biological Research	4	
BIO 201IH	Human Anatomy, Physiology and Histology	5	
BIO 201IN	Human Anatomy/Physiology I SUN# BIO 2201	4	
BIO 202IN	Human Anatomy/Physiology II SUN# BIO 2202	4	
BIO 205IN	Microbiology SUN# BIO 2205	4	
CHM 121IN	Chemistry and Society	4	
CHM 122IN*	Chemistry and Society II	4	
CHM 25IN*	Consumer Chemistry	4	
CHM 130IN	Fundamental Chemistry SUN# CHM 1130	5	
CHM 140IN	Fundamental Organic and Biochemistry SUN# CHM 2230	5	
CHM 151IN	General Chemistry I SUN# CHM 1151	5	
CHM 152IN	General Chemistry II SUN# CHM 1152	5	
CHM 235IN	General Organic Chemistry I SUN# CHM 2235	5	
CHM 236IN	General Organic Chemistry II SUN# CHM 2236	5	
ENV 105/105LB††	Humanity and the Environment	4	I
FSN 127IN††	Human Nutrition and Biology	4	I
GEO 101	Physical Geography: Weather and Climate	4	
GEO 102	Physical Geography: Land Forms and Oceans	4	
GLG 101IN	Physical Geology SUN# GLG 1101	4	
GLG 102IN	Historical Geology	4	
GLG 110IN	Geological Disasters and Environmental Geology	4	
GLG 140IN*	Introduction to Oceanography	4	
PHY 115/115LB*	Physical Science	4	
PHY 121/121LB or PHY 121IN	Introductory Physics I SUN# PHY 1111	5	
PHY 122/122LB or PHY 122IN	Introductory Physics II SUN# PHY 1112	5	
PHY 210/210LB or PHY 210IN	Introductory Mechanics SUN# PHY 1121	5	
PHY 216/216LB or PHY 216IN	Introductory Electricity and Magnetism SUN# PHY 1131	5	
PHY 221/221LB	Introduction to Waves and Heat	4	
ZTR BP	AGEC Science Equivalent	4	
ZTR BPI	AGEC Science Equivalent	4	I
ZTR BPC	AGEC Science Equivalent	4	C
ZTR BPG	AGEC Science Equivalent	4	G
ZTR BPIC	AGEC Science Equivalent	4	I,C
ZTR BPIG	AGEC Science Equivalent	4	I,G
ZTR BPCG	AGEC Science Equivalent	4	C,G
ZTR BPICG	AGEC Science Equivalent	4	I,C,G

\* No longer offered, but will fulfill requirement.

†† This course is cross-listed with (the same as) another course – only one will apply to meet AGEC, degree or certificate requirements. The course description will indicate the cross-listed course.

NOTE: The University of Arizona Natural Science General Education courses (NATS or science courses numbered 170A, B or C) do not fulfill Biological and Physical Science requirements.

**AGEC Categorical Requirement: Mathematics (3 credits)**

Complete three credits. The AGECE-A requires MAT 142, 144, 151 or above. The AGECE-B requires MAT 212 or 220. The AGECE-S requires MAT 220 or above. See the degree display for the selection of the appropriate course.

Course Number	Course Title	Credit Hours	AGEC Special Requirement
BUS 205	Statistical Methods in Economics & Business SUN# BUS 2201	3	
BUS 277	Analytical Methods in Business	4	
MAT 141	Topics in College Mathematics	3	
MAT 142	Topics in College Mathematics	3	
MAT 144*	College Algebra with Data Analysis	4	
MAT 151	College Algebra SUN# MAT 1151	4	
MAT 167	Introductory Statistics SUN# MAT 1160	3	
MAT 172	Finite Mathematics	3	
MAT 182	Trigonometry	3	
MAT 187*	Precalculus	5	
MAT 188	Precalculus I	4	
MAT 189	Precalculus II	3	
MAT 212	Topics in Calculus	3	
MAT 220	Calculus I SUN# MAT 2220	5	
MAT 227	Discrete Mathematics in Computer Science SUN# MAT 2227	4	
MAT 231	Calculus II SUN# MAT 2230	4	
MAT 241	Calculus III SUN# MAT 2241	4	
MAT 252	Introduction to Linear Algebra	3	
MAT 262	Differential Equations SUN# MAT 2262	3	

\* No longer offered, but will fulfill requirement.

**AGEC Categorical Requirement: Social and Behavioral Sciences (6 credits)**

Complete courses in two subject areas (at least two course prefixes).

Course Number	Course Title	Credit Hours	AGEC Special Requirement
AIS 101	Introduction to American Indian Studies I	3	
AIS 122++	Tohono O'odham History and Culture	3	I,C,G
AIS 124++	History and Culture of the Yaqui People	3	C,G
AIS 148++	History of Indians of North America	3	C,G
AIS 205++	Introduction to Southwestern Prehistory	3	C
ANT 206++	Contemporary Native Americans of the Southwest	3	C
AJS 225	Criminology	3	
ANT 101++	Human Origins and Prehistory	3	
ANT 102	Introduction to Cultural Anthropology and Linguistics	3	G
ANT 110++	Buried Cities and Lost Tribes	3	
ANT 112	Exploring Non-Western Cultures	3	I,C,G
ANT 127++	History & Culture of the Mexican-American in the Southwest	3	I,C,G
ANT 148++	History of Indians of North America	3	C,G
ANT 150++*	African-American History and Peoples	3	C
ANT 202	Sexuality, Gender, and Culture	3	C
ANT 205++	Introduction to Southwestern Prehistory	3	C
ANT 206++	Contemporary Native Americans of the Southwest	3	C
ANT 210	Cultural Anthropology	3	I,G
APA 200*	Contemporary Issues in Asian American Society	3	C
ARC 101++	Human Origins and Prehistory	3	
ARC 110++	Buried Cities and Lost Tribes	3	
ARC 205++	Introduction to Southwestern Prehistory	3	C
ECE 107	Human Development and Relations	3	
ECE 117	Child Growth and Development	3	

**AGEC Categorical Requirement: Social and Behavioral Sciences (6 credits) (continued)**

Complete courses in two subject areas (at least two course prefixes).

Course Number	Course Title	Credit Hours	AGEC Special Requirement
ECN 150	An Economics Perspective	3	G
ECN 200	Basic Economic Principles	3	
ECN 201	Microeconomic Principles SUN# ECN 2202	3	
ECN 202	Macroeconomic Principles SUN# ECN 2201	3	
GEO 103	Cultural Geography	3	G
GEO 104	World Regional Geography	3	G
GEO 250	Introduction to Medical Geography	3	G
HIS 101	Introduction to Western Civilization I	3	I,G
GWS 202	Sexuality, Gender and Culture	3	C
HIS 102	Introduction to Western Civilization II	3	I,G
HIS 105	Introduction to Chicano Studies	3	I,C,G
HIS 113	Chinese Civilization	3	G
HIS 114	Japanese Civilization	3	G
HIS 122++	Tohono O'odham History and Culture	3	I,C,G
HIS 124++	History & Culture of the Yaqui People	3	C,G
HIS 127++	History & Culture of the Mexican-American in the Southwest	3	I,C,G
HIS 141	History of the United States I	3	C,G
HIS 142	History of the United States II	3	C,G
HIS 147	History of Arizona	3	C
HIS 148++	History of Indians of North America	3	C,G
HIS 150++	African-American History and People	3	C
HIS 160	Latin America Before Independence	3	I,C,G
HIS 161	Modern Latin America	3	I,C,G
HIS 170*	History and People of Africa	3	G
HIS 180	Women in Western History	3	C
HIS 253 *	History of Women in the United States: Early America	3	C
HIS 254	History of Women in the United States: The 20th Century	3	C
HIS 274	The Holocaust	3	G
HIS 284*	Modern Israel and Arab/Israeli Relations	3	G
HUM 260	Intercultural Perspectives	3	I,C
LIS 150	Social Media and Ourselves	3	
JRN 102	Survey of Media Communications	3	G
PHI 101	Introduction to Philosophy SUN# PHI 1101	3	
PHI 130	Introductory Studies in Ethics & Social Philosophy SUN# PHI 1105	3	
PHI 140++	Philosophy of Religion	3	
POS 100	Introduction to Politics	3	
POS 201	American National Government and Politics SUN# POS 1110	3	C
POS 202	Introduction to International Relations SUN# POS 1120	3	G
POS 203	Introduction to Political Ideas	3	
POS 204	Intro to Comparative Politics SUN# POS 2204	3	C,G
POS 210	National and State Constitutions	3	
POS 231	American State & Local Governments & Politics SUN# POS 1130	3	C
POS 240	Understanding Terrorism	3	
PSY 100A	Psychology I	3	
PSY 100B	Psychology II	3	
PSY 101	Introduction to Psychology SUN# PSY 1101	4	
PSY 132	Psychology and Culture	3	G
PSY 210*	Introduction to Biopsychology	3	
PSY 215++	Human Sexuality	3	C,G
PSY 216	Psychology of Gender	3	C
PSY 218	Health Psychology	3	
PSY 230	Psychological Measurements and Statistics	3	
PSY 240	Developmental Psychology	3	
PSY 250*	Introduction to Social Psychology	3	
PSY 265*	Normal Personality	3	

**AGEC Categorical Requirement: Social and Behavioral Sciences (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
REL 140††	Philosophy of Religion	3	
REL 200	Religion in Popular Culture	3	C
REL 220	Old Testament	3	
REL 221	New Testament	3	
REL 234*	Islam	3	G
SOC 101	Introduction to Sociology SUN# SOC 1101	3	C
SOC 103*	Explorations in Prejudice	3	C
SOC 110	Intro to Cities and Global Society	3	G
SOC 120	Current Social Problems SUN# SOC 2250	3	C,G
SOC 166	Social Gerontology	3	
SOC 201	Race, Ethnicity, Minority Groups & Social Justice SUN# SOC 2215	3	C
SOC 203	Sociology of Utopia	3	I,G
SOC 204	Gender Identities, Interactions, and Relations	3	C
SOC 215††	Human Sexuality	3	C,G
SOC 273*	Sociology of Sport	3	C
SSE 110	Introduction to Social Welfare	3	
ZTR SB	AGEC Social and Behavioral Sciences Equivalent	3	
ZTR SBI	AGEC Social and Behavioral Sciences Equivalent	3	I
ZTR SBC	AGEC Social and Behavioral Sciences Equivalent	3	C
ZTR SBG	AGEC Social and Behavioral Sciences Equivalent	3	G
ZTR SBIC	AGEC Social and Behavioral Sciences Equivalent	3	I,C
ZTR SBIG	AGEC Social and Behavioral Sciences Equivalent	3	I,G
ZTR SBCG	AGEC Social and Behavioral Sciences Equivalent	3	C,G
ZTR SBICG	AGEC Social and Behavioral Sciences Equivalent	3	I,C,G

\* No longer offered, but will fulfill requirement.

†† This course is cross-listed with (the same as) another course – only one will apply to meet AGEC, degree or certificate requirements. The course description will indicate the cross-listed course.

**AGEC Categorical Requirement: Other Requirement Options (6 credits)**

Complete all six credits from the courses listed below, or include up to 3 credits from Humanities and Fine Arts and/or 3 credits from Social and Behavioral Sciences.

**a) Oral Communication**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
CMN 102	Introduction to Speech Communication SUN# COM 1100	3	C
CMN 110	Public Speaking	3	C
CMN 120	Business/Professional Comm.	3	C,G
CMN 130	Small Group Discussion SUN# COM 2271	3	
CMN 136*	Oral Interpretation of Literature	3	
ZTR SP	AGEC Speech Equivalent	3	
ZTR SPI	AGEC Speech Equivalent	3	I
ZTR SPC	AGEC Speech Equivalent	3	C
ZTR SPG	AGEC Speech Equivalent	3	G
ZTR SPIC	AGEC Speech Equivalent	3	I,C
ZTR SPIG	AGEC Speech Equivalent	3	I,G
ZTR SPCG	AGEC Speech Equivalent	3	C,G
ZTR SPICG	AGEC Speech Equivalent	3	I,C,G

**b) Computer Science, Critical Thinking, Logic, Mathematics or Science:**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
ANT 102	Introduction to Cultural Anthropology and Linguistics	3	G
BUS 148	Ethics in the Workplace	3	
CIS 120 (formerly CIS 100)	Computer Applications for Business SUN# CIS 1120	3	
CIS 140*	FORTTRAN Programming	3	
CIS 160*	Cobol Programming	3	



**b) Computer Science, Critical Thinking, Logic, Mathematics or Science: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
FSN 154††	Nutrition	3	
Math	Any Mathematics course numbered 141, 142, 144*, or 151 and above		
PHI 120	Introduction to Logic SUN# PHI 1103	3	
PHI 123	Philosophical Foundations of Science	3	
PHY 230	Introduction to Modern Physics	3	
POS 100	Introduction to Politics	3	
Science	Any Science course listed under Biological and Physical Sciences		
SSE 154††	Nutrition	3	
ZTR CS	AGEC Computer Science Equivalent	3	
ZTR CSI	AGEC Computer Science Equivalent	3	I
ZTR CSC	AGEC Computer Science Equivalent	3	C
ZTR CSG	AGEC Computer Science Equivalent	3	G
ZTR CSIC	AGEC Computer Science Equivalent	3	I,C
ZTR CSIG	AGEC Computer Science Equivalent	3	I,G
ZTR CSCG	AGEC Computer Science Equivalent	3	C,G
ZTR CSICG	AGEC Computer Science Equivalent	3	I,C,G
ZTR LO	AGEC Logic Equivalent	3	
ZTR LOI	AGEC Logic Equivalent	3	I
ZTR LOC	AGEC Logic Equivalent	3	C
ZTR LOG	AGEC Logic Equivalent	3	G
ZTR LOIC	AGEC Logic Equivalent	3	I,C
ZTR LOIG	AGEC Logic Equivalent	3	I,G
ZTR LOCG	AGEC Logic Equivalent	3	C,G
ZTR LOICG	AGEC Logic Equivalent	3	I,C,G

\* No longer offered, but will fulfill requirement.

†† This course is cross-listed with (the same as) another course – only one will apply to meet AGEC, degree or certificate requirements. The course description will indicate the cross-listed course.

**c) Second Language:**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
APC 101*	Apache Language I	4	
APC 102*	Apache Language II	4	
ARB 101	Elementary Modern Standard Arabic I	5	
ARB 102	Elementary Modern Standard Arabic II	5	
ASL 101	American Sign Language I	4	C
ASL 102	American Sign Language II	4	C
ASL 201	American Sign Language III	4	C
ASL 202	American Sign Language IV	4	C
CHI 101	Elementary Chinese (Mandarin) I SUN# CHI 1101	5	
CHI 102	Elementary Chinese (Mandarin) II SUN# CHI 1102	5	
CHI 201	Intermediate Chinese (Mandarin) I SUN# CHI2201	5	G
CHI 202	Intermediate Chinese (Mandarin) II SUN# CHI 2202	5	G
FRE 101	Elementary French I SUN# FRE 1101	4	
FRE 102	Elementary French II SUN# FRE 1102	4	
FRE 201	Intermediate French I SUN# FRE 2201	4	G
FRE 202	Intermediate French II SUN # FRE 2202	4	G
GER 101	Elementary German I SUN# GER 1101	4	
GER 102	Elementary German II SUN# GER 1102	4	
GER 201	Intermediate German I SUN# GER 2201	4	G
GER 202	Intermediate German II SUN# GER 2202	4	G
GRK 101*	Elementary Modern Greek I	4	
GRK 102*	Elementary Modern Greek II	4	
GRK 201*	Intermediate Modern Greek I	4	G
GRK 202*	Intermediate Modern Greek II	4	G
HEB 101*	Elementary Modern Hebrew I	4	
HEB 102*	Elementary Modern Hebrew II	4	
HEB 201*	Intermediate Modern Hebrew I	4	G

**c) Second Language: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
HEB 202*	Intermediate Modern Hebrew II	4	G
ITA 101	Elementary Italian I SUN# ITA 1101	4	
ITA 102	Elementary Italian II SUN# ITA 1101	4	
ITA 201*	Intermediate Italian I SUN# ITA 2201	4	G
ITA 202*	Intermediate Italian II SUN# ITA 2202	4	G
JPN 101	Elementary Japanese SUN# JPN 1101	5	
JPN 102	Elementary Japanese II SUN# JPN 1102	5	
JPN 201	Intermediate Japanese I SUN# JPN 2201	5	G
JPN 202	Intermediate Japanese II SUN# JPN 2202	5	G
KOR 101	Elementary Korean I	4	
KOR 102	Elementary Korean II	4	
LAT 101	Elementary Latin I SUN# LAT 1101	4	
LAT 102	Elementary Latin II SUN# LAT 1102	4	
LAT 201*	Intermediate Latin I SUN# LAT 2201	4	
LAT 202*	Intermediate Latin II SUN# LAT 2202	4	
POR 101	Elementary Portuguese I	4	
POR 102	Elementary Portuguese II	4	
POR 201*	Intermediate Portuguese I	4	G
POR 202*	Intermediate Portuguese II	4	G
RUS 101	Elementary Russian I SUN# RUS 1101	4	
RUS 102	Elementary Russian II SUN# RUS 1102	4	
RUS 201*	Intermediate Russian I SUN# RUS 2201	4	G
RUS 202*	Intermediate Russian II SUN# RUS 2202	4	G
SPA 101	Elementary Spanish I SUN# SPA 1101	4	
SPA 102	Elementary Spanish II SUN# SPA 1102	4	
SPA 103	Beginning Spanish for Heritage and Bilingual Learners	4	G
SPA 104*	Spanish for Spanish Speakers II	4	G
SPA 201	Intermediate Spanish I SUN# SPA 2201	4	G
SPA 202	Intermediate Spanish II SUN# SPA 2202	4	G
SPA 203	Writing and Oral Skills for Heritage and Bilingual Learners	4	G
SPA 253	Intermediate Spanish for Heritage and Bilingual Learners	4	G
SPA 254	Intermediate Grammar/Writing for Heritage and Bilingual Learners	4	G
THO 101*	Elementary Tohono O'odham I	4	G
THO 102*	Elementary Tohono O'odham II	4	G
YAQ 101*	Elementary Yaqui I	4	G
YAQ 102*	Elementary Yaqui II	4	G
ZTR LA	AGEC Language Equivalent	3	
ZTR LAI	AGEC Language Equivalent	3	I
ZTR LAC	AGEC Language Equivalent	3	C
ZTR LAG	AGEC Language Equivalent	3	G
ZTR LAIC	AGEC Language Equivalent	3	I,C
ZTR LAIG	AGEC Language Equivalent	3	I,G
ZTR LACG	AGEC Language Equivalent	3	C,G
ZTR LAICG	AGEC Language Equivalent	3	I,C,G

\* No longer offered, but will fulfill requirement.

**d) International and Multi-Cultural Studies:**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
AIS 122++	Tohono O'odham History & Culture	3	I,C,G
AIS 124++	History and Culture of the Yaqui People	3	C,G
AIS 148++	History of Indians of North America	3	C,G
AIS 205++	Introduction to Southwestern Prehistory	3	C
AIS 206++	Contemporary Native Americans of the Southwest	3	C
ANT 102	Introduction to Cultural Anthropology and Linguistics	3	G
ANT 112	Exploring Non-Western Cultures	3	I,C,G
ANT 127++	History & Culture of the Mexican-American in the Southwest	3	I,C,G

**d) International and Multi-Cultural Studies: (continued)**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>AGEC Special Requirement</b>
ANT 148††	History of Indians of North America	3	C,G
ANT 150††*	African-American History and People	3	C
ANT 202	Sexuality, Gender, and Culture	3	C
ANT 205††	Introduction to Southwestern Prehistory	3	C
ANT 206††	Contemporary Native Americans of the Southwest	3	C
ANT 210	Cultural Anthropology	3	I,G
APA 200*	Contemporary Issues in Asian American Society	3	C
ARC 205††	Introduction to Southwestern Prehistory	3	C
ART 105	Exploring Art and Visual Culture	3	G
ART 130	Art & Culture: Prehistory to Gothic SUN# ART 1101	3	I,G
ART 131	Art & Culture: Late Gothic to Modern Periods SUN# ART 1102	3	I,G
ART 134*	Art of Diverse Cultures	3	G
BIO 108IN	Plants, People and Society	4	G
BIO 250	Biomedical Ethics	3	G
BUS 210	International Business	3	G
GEO 103	Cultural Geography	3	G
GEO 104	World Regional Geography	3	G
GEO 250	Introduction to Medical Geography	3	G
HIS 101	Introduction to Western Civilization I	3	I,G
HIS 102	Introduction to Western Civilization II	3	I,G
HIS 105	Introduction to Chicano Studies I	3	I,C,G
HIS 113	Chinese Civilization	3	G
HIS 114	Japanese Civilization	3	G
HIS 115*	Civilization of India	3	G
HIS 122††	Tohono O'odham History and Culture	3	I,C,G
HIS 124††	History & Culture of the Yaqui People	3	C,G
HIS 127††	History & Culture of the Mexican-American in the Southwest	3	I,C,G
HIS 141	History of the United States I	3	C,G
HIS 142	History of the United States II	3	C,G
HIS 147	History of Arizona	3	C
HIS 148††	History of Indians of North America	3	C,G
HIS 150††	African American History and People	3	C
HIS 160	Latin America Before Independence	3	I,C,G
HIS 161	Modern Latin America	3	I,C,G
HIS 170*	History and People of Africa	3	G
HIS 180	Women in Western History	3	C
HIS 244*	Western America	3	C
HIS 253*	History of Women in the United States: Early America	3	C
HIS 254	History of Women in the United States: The 20th Century	3	C
HIS 274	The Holocaust	3	G
HIS 277*	History of the Middle East: From the Rise of Islam to 1453	3	G
HIS 278*	History of the Middle East: From 1453 to the Present Age	3	G
HIS 284*	Modern Israel and Arab/Israeli Relations	3	G
HUM 251	Western Humanities I	3	I,G
HUM 252	Western Humanities II	3	I,G
HUM 253	Western Humanities III	3	I,C,G
HUM 260	Intercultural Perspectives	3	I,C
IDE 213*	History of Interior Architecture and Furniture from 1900–Present	3	G
JPN 245*	Japanese Culture and Communication	3	G
JRN 102	Survey of Media Communications	3	G
LIT 224	Southwestern Literature	3	I,C
LIT 240	American Literature of Opposition	3	I,C
LIT 261	Modern Literature	3	I,C,G
LIT 266*	World Drama	3	I,G
LIT 267	World Literature: Narrative	3	I,G
LIT 274*	Native American Literature	3	I,C

**d) International and Multi-Cultural Studies: (continued)**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>AGEC Special Requirement</b>
POS 201	American National Government and Politics SUN# POS 1110	3	C
POS 202	Introduction to International Relations SUN# POS 1120	3	G
POS 204	Introduction to Comparative Politics SUN# SOC 2204	3	C,G
POS 230	Minority Groups and the Political Process	3	C
POS 231	American State & Local Governments & Politics SUN# SOC 1130	3	C
PSY 132	Psychology and Culture	3	G
PSY 215††	Human Sexuality	3	C,G
PSY 216	Psychology of Gender	3	C
REL 119	Judaism, Christianity and Islam	3	G
REL 130	Asian Religions	3	G
REL 200	Religion in Popular Culture	3	C
REL 234*	Islam	3	G
REL 273*	Judaism	3	C
REL 275*	Native American Worldviews	3	C
SOC 101	Introduction to Sociology SUN# SOC 1101	3	C
SOC 103*	Explorations in Prejudice	3	C
SOC 110	Introduction to Cities and Global Society	3	G
SOC 120	Current Social Problems SUN# SOC2250	3	C,G
SOC 201	Race, Ethnicity, Minority Groups & Social Justice SUN# SOC 2215	3	C
SOC 203	Sociology of Utopia	3	I,G
SOC 204	Identities, Interaction, and Relations	3	C
SOC 215††	Human Sexuality	3	C,G
SOC 273*	Sociology of Sport	3	C
THE 105	Theater Appreciation	3	C
ZTR MC	AGEC Multicultural Equivalent	3	



# Educational Programs, Degrees and Certificates



## Degrees and Certificates Definitions

The current educational programs are listed below with the name of the degree or certificate, the award type, the program code, the major code, and any concentration codes associated with the program. These codes identify the student's program of study in their student record and in MyDegreePlan. If a student is uncertain about which codes to use or for information on programs without program codes, please see an advisor or counselor.

There is an additional column entitled Lead Campus in the Occupational Program list. The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus or see an advisor or counselor.

Although the Transfer Programs do not have a lead campus, transfer program's core/major courses and some general education courses may not be offered on every campus. Check the class schedule or see an advisor or counselor.

The definitions of the abbreviations in the Award column are:

### **AA Associate of Arts for Transfer**

An Associate of Arts is a credit degree of 60-64 credits for transfer to a college or university into majors related to arts, humanities, social and behavioral science, and education. The AA includes an Arizona General Education Curriculum (AGEC)-A. See General Education Requirements for Transfer Program section for more information on AGECE.

### **ABUS Associate of Business for Transfer**

An Associate of Business Administration is a credit degree of 60-64 credits for transfer to a college or university into a business or business-related major. The ABUS includes an Arizona General Education Curriculum (AGEC)-B. See the General Education Requirements for Transfer Programs section for more information on AGECE.

### **AFA Associate of Fine Arts for Transfer**

An Associate of Fine Arts is a credit degree of 60-64 credits for transfer to a college or university into majors related to fine arts. The AFA includes an Arizona General Education Curriculum (AGEC)-A. See General Education Requirements for Transfer Program section for more information on AGECE.

### **AS Associate of Science for Transfer**

An Associate of Science is a credit degree of 60-64 credits for transfer to a college or university into a science or science-related major. The AS includes an Arizona General Education Curriculum (AGEC)-S. See the General Education Requirements for Transfer Programs section for more information on AGECE.

### **AGS Associate of General Studies**

An Associate of General Studies is a credit degree of 60 credits designed by the student. If planning to seek employment or to transfer, the student should develop a

plan of study with an advisor or counselor.

### **AAA Associate of Applied Arts for Direct Employment**

An Associate of Applied Arts is a credit degree of at least 60 credits for direct employment into jobs requiring some art-related skills and competencies.

### **AAS Associate of Applied Science for Direct Employment**

An Associate of Applied Science is a credit degree of at least 60 credits for direct employment into jobs requiring skills and competencies in the technologies, business, government and public service, and health-related professions.

### **CERT Credit Certificate**

A credit certificate is offered in a specific field of study of less than 60 credits for direct employment into a job or for transfer to a college or university.

### **CTD Clock Hour Certificate**

A Clock Hour Certificate is offered in a specific field of study for direct employment into a job. The program is non-credit clock hour rather than credit and is offered through the Center for Training and Development (CTD) located at the Desert Vista Campus.

### **CERA Post-Degree Certificate**

A Post-Degree Certificate is a credit certificate in a specific field of study of less than 60 credits for direct employment into a job. An Associate's Degree or a Bachelor's Degree (depending on the program) is required before beginning a Post-Degree Certificate. See program display for specific requirements.

## Lists of Credit Degrees and Certificates

There are three lists of credit certificates and degrees:

- Occupational Programs (WFD, CTD, CERT, CERA, AAA, and AAS)
- General Studies Programs (AGS)
- Transfer Programs (CERT, AA, ABUS, AFA and AS)

### Campus legend:

CC	=	Community Campus
DV	=	Desert Vista Campus
DC	=	Downtown Campus
EC	=	East Campus
NW	=	Northwest Campus
WC	=	West Campus

## Occupational Programs

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
<b>Accounting</b>					
Accounting	CERT	CRTACCOUNTIN	ACT		WC
Accounting	AAS	AASACCOUNTIN	ACC		WC
<b>Administration of Justice Studies</b>					
Administration of Justice Studies	AAS	AASADMINJUST	AJS		EC
<b>Applied Arts</b>					
Applied Arts	AAA	AAAAPPLDARTS	APT		WC
<b>Archaeology</b>					
Field Archaeology	CERT	CRTFLDARCHEO	ARF		WC
Concentrations:					
Field and Lab Fundamentals				ARCL	
Field Methods				ARCM	
Geospatial Information Studies & Technology				ARCC	
Southwestern Cultures				ARCS	
<b>Archaeology Future Enrollment Programs</b>					
Field Archaeology Fundamentals	CERT				WC
Advanced Field Archaeology	CERT				WC
Geospatial Information Studies & Technology	CERT				WC
Field Archaeology of the Southwest	CERT				WC
<b>Automotive Technology</b>					
Automotive Mechanics	CERT	CRTAUTOMECHS	AUM		DC
Automotive Technology	AAS	AASAUTOTECHN	AUT		DC
<b>Aviation Technology</b>					
Aviation Technology	AAS	<b>Special Admissions**</b>			DV
Advanced Aviation Technology	CERT	<b>Special Admissions**</b>			DV
Concentrations:					
General Mechanics					
Airframe Mechanics					
Powerplant					
Structure Repair					
Avionics Technician	CERT	<b>Special Admissions**</b>			DV

\* The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer only introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus.

\*\* Selective Admissions Requirements—See an advisor

## Occupational Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
<b>Aviation Future Enrollment Programs</b>					
Aircraft General Mechanics	CERT	Special Admissions**			DV
Aircraft Airframe Mechanics	CERT	Special Admissions**			DV
Aircraft Powerplant Mechanics	CERT	Special Admissions**			DV
Aircraft Structural Repair	CERT	Special Admissions**			DV
<b>Behavioral Health Services</b>					
Behavioral Health Services	CERT	Special Admissions**			DV
<b>Bioscience Laboratory Technician</b>					
Bioscience Laboratory Technician	CERT	Special Admissions**			NW
<b>Building and Construction Technologies</b>					
Building & Construction Technologies	AAS	AASBLDGCONST	BCT		DC
Concentrations:					
Building Management				BCTB	
Cabinetmaker				BCTK	
Carpenter				BCTC	
Construction Management				BCTM	
Electrician				BCTE	
Electrical Utilities Technology				BCTG	
HVAC-R Technician				BCTH	
Natural Gas Technology				BCTN	
Plumber				BCTP	
Solar Installer				BCTI	
Cabinetmaker	CERT	CRTCMK	CMK		DC
Solar Installer	CERT	CRTSIC	SIC		DC
Advanced Building & Construction Technologies	CERT	CRTBLDGCON-A	BCA		DC
Concentrations:					
Carpenter				BCTC	
Electrician				BCTE	
HVAC-R Technician				BCTH	
Plumber				BCTP	
<b>Building and Construction Technologies Future Enrollment Programs</b>					
Carpenter	CERT				DC
Electrician	CERT				DC
HVAC-R Technician	CERT				DC
Plumber	CERT				DC
<b>Business</b>					
Basic Business	CERT	CRTBUSINES-B	BUB		EC
Advanced Business	CERT	CRTBUSINES-A	BUA		EC
Business	AAS	AASBUSINESS	BUS		EC
Concentrations:					
Marketing				BUSK	
Management				BUSM	
Logistics and Supply Chain Management (Basic)	CERT	CRTLGC	LGC		EC
Logistics and Supply Chain Management (Advanced)	CERT	CRTLGV	LGV		EC
Logistics and Supply Chain Management	AAS	AASLGM	LGM		EC
Retail Management	CERT	CRTBFR	BFR		DC
International Business Management	CERT	CRTIBM	IBM		
<b>Child Development Associate</b>					
See Education					

\* The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer only introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus.

\*\* Selective Admissions Requirements—See an advisor



## Occupational Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
<b>Clinical Research Trial Coordinator</b>					
Clinical Research Coordinator	AAS	<b>Special Admissions**</b>			NW
<b>Computer-Aided Design Technology</b>					
Computer-Aided Design Concentrations: Construction Integrated Circuit Layout Design Mechanical/Electro-Mechanical	AAS	AASELECMECHN	CAD	DFTC DFTI DFTA	DC
CAD Technician	CERT	CRTCDDT	CDT		DC
Civil Engineering Technician	CERT	CRTCIV	CIV		DC
Revit Technician	CERT	CRTREV	REV		DC
SolidWorks Designer	CERT	CRTSWD	SWD		DC
Integrated Circuit Layout Design	CERT	CRTICD	ICD		DC
Architectural Technician	CERT	CRTACH	ACH		DC
Mechanical Designer/CNC Programmer	CERT	CRTMDC	MDC		DC
Mechanical/Electro-Mechanical Designer	CERT	CRTMEM	MEM		DC
Computer-Aided Drafting/Design, Basic	CERT	CRTCONDRFT-B	CAB		DC
Computer-Aided Drafting/Design, Advanced	CERT	CRTCONDRFT-A	CAA		DC
<b>Computer Information Systems</b>					
Computer Programmer/Analyst	AAS	AASCMPPRGANL	CSP		WC
Systems Administration/Networking Concentrations: CISCO Linux Microsoft	CERT	CRTNETWRKADM	CSD	CSNC CSNX CSNM	WC
Systems Administration/Networking Concentrations: Administrator Cyber Security	AAS	AASCOMPYSAD	CSN	CSNA CSNY	WC
<b>Computer Information Systems Future Enrollment Programs</b>					
CISCO Systems Network Analyst/Administration	CERT				WC
Linux Server Administration	CERT				WC
Microsoft Server Administration	CERT				WC
<b>Culinary Arts</b>					
Culinary Arts	CERT	<b>Special Admissions**</b>			DV
Culinary Arts	AAS	<b>Special Admissions**</b>			DV
<b>Dental Studies</b>					
Dental Assisting Education	CERT	<b>Selective Admissions**</b>			WC
Dental Hygiene	AAS	<b>Selective Admissions**</b>			WC
Dental Laboratory Technology	AAS	<b>Selective Admissions**</b>			WC
<b>Digital Arts</b>					
Digital Arts Concentrations: Design Illustration Multimedia Web Design	AAS	AASCOMMGRAPH	DAR	DARD DARI DARM DARW	WC
Digital and Film Arts	AAS	AASDIGIFILM	MEF		WC

\* The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer only introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus.

\*\* Selective Admissions Requirements—See an advisor

## Occupational Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
Digital and Film Arts – Animation	AAS	AASANIMATION	ANM		WC
Digital Game & Simulation	AAS	AASDAG	DAG		WC
Concentrations: Digital Animation and Production				DAGA	
Digital Programming				DAGP	
<b>Direct Care Professional</b>					
Basic Direct Care Professional <b>Under Review</b>	CERT	CRTDCP	DCP		NW
<b>Education</b>					
Early Childhood Education and Child Development Associate					
Early Childhood Studies for Employed Professionals	CERT	<b>Special Admissions**</b>			DV
Advanced Early Childhood Studies	CERT	<b>Special Admissions**</b>			DV
Early Childhood Studies	AAS	<b>Special Admissions**</b>			DV
Teacher Education					
Elementary Certification	CERA	<b>Special Admissions**</b>			CC
Secondary Certification	CERA	<b>Special Admissions**</b>			CC
Special Education Mild-Moderate Disability Certification	CERA	<b>Special Admissions**</b>			CC
Special Education Mild-Moderate Disability Certification for Certified Teachers	CERA	<b>Special Admissions**</b>			CC
<b>Emergency Medical Technology</b>					
Emergency Medical Technology	CERT	<b>Special Admissions**</b>			EC
EMT Paramedic	AAS	<b>Special Admissions**</b>			EC
<b>Fashion Design</b>					
Fashion Design	CERT	CRTFDC	FDC		WC
Also See Applied Arts, Art Electives list					
<b>Fire Science</b>					
Fire Science Academy Track	CERT	<b>Special Admissions**</b>			CC
Fire & Emergency Services Higher Education (FESHE)	AAS	<b>Special Admissions**</b>			CC
<b>Fitness and Sport Sciences</b>					
Coaching	CERT	CRTCOACHING	FSG		WC
Fitness Professional	CERT	CRTFITNESS	FSP		WC
Fitness and Wellness Specialist	CERT	CRTFWS	FWS		WC
<b>Health Information Management</b>					
Health Information Technology	AAS	AASOAH	OAH		DC
Health Information Technology	CERT	CRTOAH	OAM		DC
Concentrations: Medical Billing and Coding				OAHB	
Health Information Management				OAHM	
<b>Health Information Management Future Enrollment Programs</b>					
Medical Billing and Coding	CERT				DC
Health Information Management	CERT				DC
<b>Hotel and Restaurant Management</b>					
Hotel and Restaurant Management	CERT	CRTHRM	HRC		NW

\* The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer only introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus.

\*\* Selective Admissions Requirements—See an advisor

## Occupational Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
<b>Human Resources</b>					
Human Resources	CERT	CRTHUMANRES	HRS		CC
<b>Law Enforcement Academy</b>					
Law Enforcement Academy	CERT	Special Admissions**			CC
Law Enforcement	AAS	Special Admissions**			CC
<b>Logistics and Supply Chain Management</b>					
See Business					
<b>Legal Assistant</b>					
See Paralegal					
<b>Machine Tool Technology</b>					
Machine Tool Technology	CERT	CRTMACHNTOOL	MCT		DC
Concentrations:					
Mechanical Inspector				MACI	
Manual Machinist				MACM	
Computer Numerical Control (CNC) Machinist				MACC	
Computer Numerical Control (CNC) Programmer				MACP	
Machine Tool Technology	AAS	AASMACHNTOOL	MAC		DC
Concentrations:					
Computer Numerical Control (CNC) Programmer				MACP	
Computer Numerical Control (CNC) Operator				MACR	
<b>Machine Tool Technology Future Enrollment Programs</b>					
Manual Machinist	CERT				DC
Machining Inspection and Quality Assurance	CERT				DC
Computer Numerical Control (CNC) Operator	CERT				DC
Computer Numerical Control (CNC) Programmer	CERT				DC
<b>Massage</b>					
See Therapeutic Massage					
<b>Medical Assistant</b>					
Medical Assistant	CERT	Special Admissions**			DV
<b>Medical Laboratory Technician</b>					
Medical Laboratory Technician	AAS	Special Admissions**			WC
<b>Nursing</b>					
Associate Degree Nursing	AAS	Selective Admissions**			WC
<b>Paralegal</b>					
Paralegal	AAS	AASLEGALASST	LAS		DC
Paralegal	CERA	Special Admissions**			DC
<b>Pharmacy Technology</b>					
Pharmacy Technology	CERT	Special Admissions**			EC
Pharmacy Technology	AAS	Special Admissions**			EC

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\*\* Selective Admissions Requirements—See an advisor

## Occupational Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
<b>Phlebotomy</b>					
Phlebotomy	CERT	Special Admissions**			DV
<b>Radiologic Technology</b>					
Radiologic Technology	AAS	Selective Admissions**			WC
<b>Respiratory Care</b>					
Respiratory Care	AAS	Selective Admissions**			WC
<b>Social Services</b>					
Social Services	AAS	AASSOCIALSRV	SSE		WC
Substance Use Disorder Specialty	AAS	AASSUBSTABUS	SSS		WC
Youth Services Specialty	AAS	AASYOUTHSERV	SSY		WC
Basic Social Services	CERT	CRTSOCIALSRV	SSC		WC
Substance Use Disorder	CERT	CRTSUBSTABUS	SSA		WC
Domestic Violence Intervention	CERT	CRTDOMESVIOL	SSD		WC
Community Health Advisor	CERT	CRTHEALTHADV	CHA		WC
<b>Therapeutic Massage</b>					
Therapeutic Massage	CERT	Special Admissions**			NW
Therapeutic Massage	AAS	Special Admissions**			NW
<b>Translation and Interpretation Studies</b>					
Translation & Interpretation Studies	CERT	Special Admissions**			DC
Translation & Interpretation Studies	AAS	AASTRANSLATE	TRI		DC
<b>Truck Driver Training</b>					
Class A Vehicle Driver	CERT	Special Admissions**			CC
Coach/Transit Bus Driver	CERT	Special Admissions**			CC
<b>Veterinary Science</b>					
Veterinary Practice Assistant	CERT	CRTVEP	VEP		EC
Veterinary Technician	AAS	Special Admissions**			EC
<b>Welding</b>					
Welding and Fabrication	AAS	AASWELDING	WLD		DC

## General Studies

Program	Award	Program Code	Major Code	Concentration Code
General Studies	AGS	AGSGENRSTUDY	AGS	

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\*\* Selective Admissions Requirements—See an advisor



## Transfer Programs

Program	Award	Program Code	Major Code	Concentration Code
<b>Administration of Justice Studies</b>				
	AA	AOAADMINJUST	AJT	
<b>American Indian Studies</b>				
	AA	AOAAMRINDSTU	AIS	
<b>American Sign Language &amp; Interpretation Studies</b>				
See concentration in Liberal Arts				
<b>Anthropology</b>				
	AA	AOAANTHROPOL	ANT	
Concentrations: Anthropology Archaeology				AANT AARC
<b>Arizona General Education Curriculum (AGEC) CERT</b>				
AGEC-A (Liberal Arts)		CRTLIBERALART		
AGEC-B (Business Administration)		CRTBUSADMIN		
AGEC-S (Science/Technology)		CRTSCIENCE		
<b>Arts, Fine</b>				
Associate of Fine Arts Degree, Visual and Performing Arts	AFA	AFAFINEARTS	AFA	
Concentrations: Dance Music Theater Visual Arts				AFAD <b>Special Admissions**</b> AFAT FAFV
<b>Business</b>				
Business Administration	ABUS	AOBBUSIADMIN	BUD	
Retailing and Fashion Consumer Sciences	AA	AOABFT	BFT	
<b>Education</b>				
Early Childhood Education	AA	<b>Special Admissions**</b>		
Education	AA	AOAEDUCATION	EDU	
<b>Engineering</b>				
See concentration in Science				
<b>Ethnic, Gender &amp; Transborder Studies</b>				
See concentration in Liberal Arts				
<b>History</b>				
See concentration in Liberal Arts				
<b>Honors Program</b>				
Honors Program	CERT	<b>Special Admissions**</b>		
<b>Hotel and Restaurant Management</b>				
Hotel and Restaurant Management	AA	AOAHSPTALITY	HRM	

\* The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer only introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus.

\*\* Selective Admissions Requirements—See an advisor

## Transfer Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code
<b>Liberal Arts</b>				
Associate of Arts	AA	AOALIBRALART	ALA	
General, no concentrations				(none)
Concentrations:				
American Sign Language & Interpretation Studies				ASLI
Ethnic, Gender & Transborder Studies				EGTS
History				ALAH
Psychology				ALAP
<b>Political Science</b>				
Political Science	AA	AOAPOLITLSCI	POS	
<b>Psychology</b>				
See concentration in Liberal Arts				
<b>Science</b>				
Associate of Science	AS	AOSSCIENCE	ASI	
General, no concentrations				(none)
Concentrations:				
Pre-Engineering				ENGR
<b>Social Services</b>				
Social Services	AA	AOASOCIALSRV	SST	
<b>Sociology</b>				
Sociology	AA	AOASOCIOLOGY	SOC	

\* The lead campus is the only campus to offer all courses required for the certificate or degree. Other campuses may offer only introductory course(s) for the certificate or degree. Check the class schedule for the courses offered on each campus.

\*\* Selective Admissions Requirements—See an advisor

# Accounting

Learn the skills and knowledge needed for bookkeeping and accounting careers. Students interested in becoming a certified public accountant should refer to the Business Administration transfer program.

## Accounting — Certificate for Direct Employment

Understand business practices and learn specific accounting skills.

### What can I do with this certificate?

**Career Options:** Entry-level bookkeeping and accounting positions

**Academic Options:** Continue your studies by taking classes toward an Accounting Associate of Applied Science degree or explore business transfer options.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-62/52.0301-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7264

Program/Major Codes: **CRTACCOUNTIN/ACT**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation</b>		
ACC 100	Practical Accounting Procedures .....	3
ACC 150*	Payroll Accounting .....	3
ACC 200*	Computerized Accounting I .....	4
ACC 204*	Individual Tax Accounting .....	4
ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201 .....	3
ACC 281*	QuickBooks Computer Accounting (was ACC 215).....	3
BUS 148	Ethics in the Workplace .....	3
WRT 154*	Career Communications .....	3
<b>Total credits as displayed .....</b>		<b>26</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Accounting — Associate of Applied Science Degree for Direct Employment

Learn the theory, systems and basic problems of business accounting.

### What can I do with this degree?

**Career Options:** Entry-level positions in private, public and government accounting.

**Academic Options:** Continue your studies by taking other business programs or work to complete a Bachelor of Applied Science program.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7264

Program/Major Codes: **AASACCOUNTIN/ACC**

**General Education Requirements - A grade of C or better is required for graduation**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
CMN 120 and WRT 154 are recommended.	
Analysis and Critical Thinking Requirement .....	6
BUS 151 is recommended to meet 3 credits of this requirement.	
Humanities and Social Science Requirement .....	6
BUS 148 and either ECN 201 or 202 are recommended.	
Computer and Information Literacy Requirement .....	1-3
CIS/CSA 104 is recommended.	
Special Requirements	
BUS 148 is recommended.	
<b>Subtotal .....</b>	<b>19-21¥</b>

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
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**Required Core Courses - A grade of C or better is required for graduation.**

ACC 100	Practical Accounting Procedures .....	3
ACC 150*	Payroll Accounting .....	3
ACC 200*	Computerized Accounting I .....	4
ACC 204*	Individual Tax Accounting .....	4
ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201 .....	3
ACC 212*	Managerial Accounting (was ACC 102) SUN# ACC 2202 .....	3
ACC 221*	Intermediate Accounting I .....	3
ACC 233	Cost Accounting .....	3
or ACC 273*	Governmental Accounting	
ACC 281*	QuickBooks Computer Accounting (was ACC 215) .....	3
ACC 296*	Independent Study in Accounting .....	.025 - 1
Electives:	.....	3
	Complete 3 credits from the following list: ACC 190, 250, ECN, MKT, MGT	
<b>Subtotal .....</b>		<b>.32.25 - 33</b>

**Required Support Courses**

BUS 100	Introduction to Business .....	3
BUS 220	Legal Environment of Business .....	3
CSA 110*	Spreadsheets: Microsoft Excel .....	3
<b>Subtotal .....</b>		<b>9</b>
<b>Total credits as displayed .....</b>		<b>60.25-63</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or support courses.



# Administration of Justice

## Administration of Justice Studies — Associate of Applied Science Degree for Direct Employment

This two-year degree covers a broad range of knowledge and professional skills in criminal law, corrections, and the American justice system. Students planning to transfer to ASU should complete the **Administration of Justice - Associate of Arts degree** instead.

### What can I do with this degree?

**Career Options:** Find entry-level employment or promotion in corrections or criminal justice.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7477

Program/Major Codes: **AASADMINJUST/AJS**

### General Education Requirements - A grade of C or better is required for graduation

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 and 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement . . . . .	6
(NAU's BAS degree requires MAT 141 or higher and a four hour lab science. Please refer to the NAU Liberal Studies course list for options.)	
Humanities and Social Science Requirement . . . . .	3
AJS 225 fulfills 3 credits of the Social Science requirement. Complete a course from the Humanities & Fine Arts or Leadership & Ethics category.	
Computer and Information Literacy Requirement . . . . .	†
CIS/CSA 104 fulfills this requirement.	
Special Requirement	
POS 201 fulfills this requirement.	
<b>Subtotal . . . . .</b>	<b>9</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

AJS 101	Introduction to Administration of Justice Systems SUN# AJS 1101. . . . .	3
AJS 109	Criminal Law . . . . .	3
AJS 115	Criminal Procedures . . . . .	3
AJS 123	Corrections as a Process . . . . .	3
AJS 124	Ethics and the Administration of Justice . . . . .	3
AJS 201	Rules of Evidence . . . . .	3
AJS 212	Juvenile Justice Procedures . . . . .	3
AJS 225	Criminology . . . . .	3

AJS Electives: complete two courses from the following: . . . . . 6

AJS 170	Forensic Pathology and Death Investigation	
AJS 204	Criminal Investigation	
AJS 210	Police Community and Human Relations	
AJS 246	Race and Ethnicity Issues in the Administration of Justice	
AJS 260*	Criminal Justice Management	
AJS 280	Terrorism in the 21st Century	
<b>Subtotal . . . . .</b>		<b>30</b>

**Required Support Courses**

CIS/CSA 104*	Computer Fundamentals .....	3
CMN 120	Business and Professional Communications .....	3
POS 201	American National Government and Politics SUN# POS 1110.....	3
POS 231	American State and Local Governments and Politics SUN# POS 1130.....	3
PSY 101	Introduction to Psychology SUN# PSY1101.....	4
SOC 101	Introduction to Sociology SUN# SOC 1101 .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102.....	3
<b>Subtotal</b> .....		<b>25</b>
<b>Total credits as displayed</b> .....		<b>64</b>

† Core or support course(s) fulfill this requirement.  
 ¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or support courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.

**Administration of Justice Studies — Associate of Arts Degree for Transfer**

Prepare for advanced studies in corrections procedures and the criminal justice system.

**What can I do with this degree?**

- Career Options:** While this degree is intended for transfer, it also may lead to employment or advancement within the justice system.
- Academic Options:** Transfer to a university degree program in Criminal Justice, Justice Studies, or a related program.
- Location:** East Campus
- Department/Contact Information:**  
 Dean: 520-206-7694  
 Lead Faculty: 520-206-7477
- Program/Major Codes:** **AOADMINJUST/AJT**

**Arizona General Education Curriculum (AGEC-A) Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	†
AJS 225 and either SOC 101 or PSY 101 fulfills this requirement.	
Other Requirements .....	6
Special Requirements	
The I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal</b> .....	<b>29¥</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

AJS 101	Introduction to Administration of Justice Systems SUN# AJS 1101.....	3
AJS 109	Criminal Law .....	3
AJS 115	Criminal Procedures .....	3
AJS 123	Corrections as a Process .....	3
AJS 124	Ethics and the Administration of Justice .....	3
AJS 201	Rules of Evidence .....	3
AJS 212	Juvenile Justice Procedures .....	3
AJS 225	Criminology .....	3

AJS Electives: complete two courses from the following:.....	6
AJS 170            Forensic Pathology and Death Investigation	
AJS 204            Criminal Investigation	
AJS 210            Police Community and Human Relations	
AJS 246            Race and Ethnicity Issues in the Administration of Justice	
AJS 260*           Criminal Justice Management	
AJS 280            Terrorism in the 21st Century	
<b>Subtotal .....</b>	<b>30</b>

**Required Support Courses**

Complete one course from the following:

PSY 101            Introduction to Psychology  SUN# PSY1101.....	3-4
or SOC 101          Introduction to Sociology  SUN# SOC 1101	

**Subtotal .....** **3-4**

**Total credits as displayed .....** **62-63**

† Core or support course(s) fulfill this requirement.

‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or Support courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# American Indian Studies

## American Indian Studies — Associate of Arts Degree for Transfer

Learn more about the cultures, histories, and issues facing Native Americans.

**What can I do with this degree?**

**Career Options:** Entry-level employment with American Indian cultural or social services agencies, including tribal agencies.

**Academic Options:** Transfer to a university degree program in Liberal Arts and Sciences.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6905

Program/Major Codes: **AOAAMRINDSTU/AIS**

**Arizona General Education Curriculum (AGEC-A) Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts .....	3
AIS/ANT 206 fulfills 3 credits in the Humanities category. Complete a course from the Art category.	
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	†
AIS/HIS 124 and HUM 260 fulfill this requirement.	
Other Requirements .....	†
Second language courses fulfill this requirement.	
AGEC Special Requirements .....	†
AIS/HIS 124 and HUM 260 fulfill the I, C and G requirements.	
<b>Subtotal</b> .....	<b>20¥</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

AIS/HIS 122	Tohono O'odham History and Culture .....	3
AIS/HIS 124	History and Culture of the Yaqui People .....	3
AIS/ANT/HIS 148	History of Indians of North America .....	3
AIS/ANT 206	Contemporary Native Americans of the Southwest .....	3
HUM 260	Intercultural Perspectives .....	3
<b>Subtotal</b> .....		<b>15</b>

**Required Support Courses**

Second Language Requirement .....	16
Completion of a Language course numbered 202, fourth-semester level or ASL 202*. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement. If a student satisfies the Language requirement in fewer than 16 credits, additional credit hours of transferable electives must be completed to meet the minimum associate degree requirement of 60 credit hours.)	
<b>Complete 9-13 transferable electives</b> .....	<b>9-13</b>
<b>Subtotal</b> .....	<b>25-29</b>
<b>Total credits as displayed</b> .....	<b>60-64</b>

† Core or support course(s) fulfill this requirement.  
 ¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See description section.



# American Sign Language

## American Sign Language (ASL) and Interpreter Studies Concentration - Liberal Arts - Associate of Arts for Transfer

Learn pre-interpreting skills such as cognitive processing and translation. This program includes lecture and laboratory skills. Students will develop the intralingual skills needed to analyze discourse in English and American Sign Language (ASL).

### What can I do with my studies in ASL and Interpreter Studies?

**Academic options:** Complete a bachelor's degree in Special Education & Rehabilitation - Deaf Studies emphasis at the UA. This program may transfer to other institutions, but some required courses may not transfer to other universities.

**Locations:** West Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-6094

Video Relay Service/Video Phone: 520-445-8338

Program/Major/Concentration Codes: **AOALIBRALART/ALA/ASLI**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences .....	8
Mathematics.....	3
Social and Behavioral Sciences .....	6
Other Requirements .....	†
ASL 101 & 102 fulfill this requirement	
Special Requirements	
ASL 201 fulfills the C requirements. The I and G requirement should be fulfilled by selecting appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>29‡</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation.</b>		
ASL 101	American Sign Language I .....	4
ASL 102*	American Sign Language II.....	4
ASL 200*	Introduction to the Deaf Community.....	3
ASL 201*	American Sign Language III .....	4
ASL 202*	American Sign Language IV .....	4
ASL 203*	Comparative Analysis of ASL and English.....	3
ASL 215*	ASL Literature: Narratives.....	3
ITP 201*	Ethics and Social Justice of Interpreting.....	3
ITP 211*	Fundamentals of Interpreting I.....	3
ITP 212*	Fundamentals of Interpreting II .....	3
<b>Subtotal .....</b>		<b>34</b>
<b>Total credits as displayed .....</b>		<b>63</b>

† Core or support course(s) fulfill this requirement.

‡ AGECE requires 35 credits. This subtotal shows the AGECE credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Anthropology

## Anthropology — Associate of Arts Degree for Transfer

Learn about human biological and cultural differences, including human biology and origins, linguistics and world cultures both past and present.

### What can I do with this degree?

**Academic Options:** Attend a university degree program in anthropology or archaeology. You may also choose to pursue a Field Archaeology Certificate to learn practical archaeological fieldwork techniques.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6905

Program/Major/Concentration Codes: **AOAANTHROPOL/ANT/\*\*\*\*** (see concentration codes below)

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences** .....	8
Mathematics.....	3
Social and Behavioral Sciences .....	3
ANT/ARC 101 fulfills 3 credits of this requirement. Complete a non-ANT/ARC course from this category.	
Other Requirements .....	†
ANT 102 and 210 fulfill this requirement.	
Special Requirements	
ANT 210 fulfills the I and G requirement. The C requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>26¥</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

ANT/ARC 101	Human Origins and Prehistory .....	3
ANT 102	Introduction to Cultural Anthropology and Linguistics .....	3
ANT/ARC 204IN	Human Evolution: Ape Men, Cave Women and Missing Links .....	4
ANT 210*	Cultural Anthropology .....	3
ANT 215	The Nature of Language .....	3
ANT/ARC 225*	Principles of Archaeology .....	3
Second Language	.....	8
Completion of a Language course numbered 102*, second semester level. (Bilingual students should consult an advisor or counselor concerning exceptions to this requirement. If a student satisfies the Language requirement in fewer than 8 credits, additional credit hours of transferable electives may be required to meet the minimum associate degree requirement of 60 credit hours.)		
<b>Subtotal .....</b>		<b>27</b>

### Core Concentrations - A grade of C or better is required for graduation.

Complete one of the following concentrations: .....	9-12
Department chair or faculty advisor approval is recommended in the selection of the program option.	
<b>Anthropology Concentration</b> (Concentration Code: AANT)	
Anthropology Electives in consultation with an Anthropology faculty advisor .....	6-8
or Language courses numbered 201 and 202, third and fourth semester level	
NOTE: ASU, NAU and UA require fourth semester level language proficiency for a B.A. in Anthropology	
Transferable Elective .....	3
<b>Subtotal .....</b>	<b>9-11</b>

**Archaeology Concentration** (Concentration Code: AARC)

ARC 275	Archaeology Excavation I .....	4
GLG 101IN	Physical Geology SUN# GLG 1101 .....	**
GLG 102IN*	Historical Geology .....	**
or BIO 109IN	Natural History of the Southwest	
Archaeology Electives in consultation with an Anthropology faculty advisor .....		6-8
or Language courses numbered 201 and 202, third and fourth semester level		
NOTE: ASU, NAU and UA require fourth semester level language proficiency for a B.A. in Anthropology		
<b>Subtotal</b> .....		<b>10-12</b>
<b>Total credits as displayed</b> .....		<b>62-65</b>

† Core or support course(s) fulfill this requirement.

‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* For the Archaeology Concentration, GLG 101IN and either GLG 102IN or BIO 109IN meet the Biological and Physical Sciences AGEC requirement.

# Archaeology

## Field Archaeology — Certificate for Direct Employment

Dig into the past by studying archaeological fieldwork. Courses are designed for those seeking professional skills, those working toward an Anthropology degree with an archaeology emphasis, as well as for those with a general interest in archaeology. This program emphasizes the preservation and conservation of resources and applied skills in archaeology, particularly related to the pre-history of southern Arizona.

**What can I do with this certificate?**

- Career Options:** Seek employment in entry-level archaeology positions.
- Academic Options:** Students planning to transfer to a four-year archaeology degree program should pursue an Anthropology AA degree simultaneously with this certificate.
- More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-31/45.0301-Gedt.html>
- Location:** West Campus
- Department/Contact Information:**  
 Dean: 520-206-6996  
 Lead Faculty: 520-206-6905
- Program/Major/Concentration Codes: **CRTFLDARCHEO/ARF/\*\*\*\*** (see concentration codes below)

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ANT/ARC 101 or ANT/ ARC 204IN	Human Origins and Prehistory .....	3-4
ANT/ARC/GIS 181	Global Positioning Systems Basics .....	1
ANT/ARC/GEO/ GIS 265	Mapping Concepts .....	1
ANT/ARC 275	Archaeological Excavation I .....	4
ANT/ARC 276*	Archaeological Surveying I .....	4
<b>Subtotal</b> .....		<b>13-14</b>
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete one (or more) of the following concentrations.....		4-15
Department faculty approval is recommended in the selection of the program concentration and electives.		
<b>Field and Lab Fundamentals</b> (Concentration Code: ARCL)		
ANT/ARC 180	Artifact Identification: Tucson Basin .....	1
ANT/ARC 225*	Principles of Archaeology .....	3
<b>Subtotal</b> .....		<b>4</b>
<b>Southwestern Cultures</b> (Concentration Code: ARCS)		
ANT 102 or ANT 112	Introduction to Cultural Anthropology and Linguistics .....	3
AIS/ANT/ARC 205	Exploring Non-Western Cultures .....	3
ANT/ARC 225*	Introduction to Southwestern Prehistory .....	3
<b>Subtotal</b> .....		<b>9</b>
<b>Field Methods</b> (Concentration Code: ARCM)		
ANT/ARC 225*	Principles of Archaeology .....	3
ANT/ARC 250*	Archaeology Laboratory .....	4
ANT/ARC 277* or ANT/ARC 278*	Archaeological Excavation II .....	4
ANT/ARC/GIS 281	Archaeological Surveying II .....	4
	Global Positioning Systems .....	1



ARC Elective	Elective in consultation with ARC faculty advisor .....	3
<b>Subtotal</b> .....		<b>15</b>
<b>Geospatial Information Studies and Technology</b> (Concentration Code: ARCC)		
ANT/ARC/ GEO/GIS 267*	Introduction to Geographic Information Systems .....	3
ANT/ARC/ GIS 281	Global Positioning Systems .....	1
ANT/ARC/GEO/ GIS 284*	Computer Cartography and CAD .....	3
ANT/ARC/ GIS 286* or DAR 120	Electronic and Digital Field Mapping .....	4
ARC, CIS, DAR, Elective	Elective in consultation with Archeology faculty advisor .....	3
<b>Subtotal</b> .....		<b>14</b>
<b>Total credits as displayed</b> .....		<b>17-29</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Archaeology Future Enrollment Programs

These programs have been submitted to the U.S. Department of Education for approval for Title IV Federal Financial Aid. At the time this catalog was submitted for publication, they had not yet been approved.

Students are not currently being admitted to these programs.

Please check the online program displays for changes to the enrollment and financial aid status.

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### Field Archaeology Fundamentals — Certificate for Direct Employment

Dig into the past by studying archaeological fieldwork. Courses are designed for those seeking professional skills, those working toward an Anthropology degree with an archaeology emphasis, as well as for those with a general interest in archaeology. This program emphasizes hands-on archaeological fieldwork and laboratory experience and applied skills in archaeology, particularly related to the prehistory of southern Arizona.

#### What can I do with this certificate?

**Career Options:** Seek employment in entry-level archaeology positions.

**Academic Options:** Students planning to transfer to a four-year archaeology degree program should pursue an Anthropology AA degree simultaneously with this certificate.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-31/45.0301-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6905

Program/Major/Concentration Codes: **CRTFLF/FLF**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ANT/ARC 101 or ANT/ ARC 204IN	Human Origins and Prehistory .....	3-4
ANT/ARC 180	Artifact Identification: Tucson Basin .....	1
ANT/ARC/GIS 181	Global Positioning Systems Basics .....	1

ANT/ARC 225*	Principles of Archaeology .....	3
ANT/ARC/GEO/ GIS 265	Mapping Concepts .....	1
ANT/ARC 275	Archaeological Excavation I .....	4
ANT/ARC 276*	Archaeological Surveying I .....	4
<b>Total credits as displayed .....</b>		<b>17-18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Advanced Field Archaeology — Certificate for Direct Employment

Dig into the past by studying archaeological fieldwork. Courses are designed for those seeking professional skills, those working toward an Anthropology degree with an archaeology emphasis, as well as for those with a general interest in archaeology. This program emphasizes hands-on archaeological fieldwork and laboratory experience and applied skills in archaeology, particularly related to the prehistory of southern Arizona.

### What can I do with this certificate?

**Career Options:** Seek employment in entry-level archaeology positions.

**Academic Options:** Students planning to transfer to a four-year archaeology degree program should pursue an Anthropology AA degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-31/45.0301-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6905

Program/Major/Concentration Codes: **CRTAFM/AFM**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ANT/ARC 101 or ANT/ ARC 204IN	Human Origins and Prehistory .....	3-4
ANT/ARC/GIS 181	Global Positioning Systems Basics .....	1
ANT/ARC/GEO/ GIS 265	Mapping Concepts .....	1
ANT/ARC 225*	Principles of Archaeology .....	3
ANT/ARC 250*	Archaeology Laboratory .....	4
ANT/ARC 275	Archaeological Excavation I .....	4
ANT/ARC 276*	Archaeological Surveying I .....	4
ANT/ARC 277* or ANT/ARC 278*	Archaeological Excavation II .....	4
ANT/ARC/GIS 281	Global Positioning Systems .....	1
ARC Elective	Elective in consultation with ARC faculty advisor .....	3
<b>Total credits as displayed .....</b>		<b>28-29</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Geospatial Information Studies and Technology — Certificate for Direct Employment

Learn about the application of geospatial information studies and technology in archaeology and other field sciences including use of precision GPS and late-stage field mapping technologies, and the production of data-based maps using ArcMap and other mapping software. Courses are designed for those seeking professional skills, those working toward an Anthropology degree with an archaeology emphasis, as well as for those with a general interest in geospatial information studies in field sciences.

### What can I do with this certificate?

**Career Options:** Seek employment in entry-level archaeology, GIS, or other mapping positions requiring a background in GIS.

**Academic Options:** Students planning to transfer to a four-year archaeology degree program should pursue an Anthropology AA degree simultaneously with this certificate.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6905

Program/Major/Concentration Codes: **CRTGIS/GIS**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ANT/ARC 101 or ANT/ ARC 204IN	Human Origins and Prehistory .....	3-4
ANT/ARC/GIS 181	Human Evolution: Ape Men, Cave Women and Missing Links	
ANT/ARC/GEO/ GIS 265	Global Positioning Systems Basics .....	1
ANT/ARC/ GEO/GIS 267*	Mapping Concepts .....	1
ANT/ARC 275	Introduction to Geographic Information Systems .....	3
ANT/ARC 276*	Archaeological Excavation I .....	4
ANT/ARC/ GIS 281	Archaeological Surveying I .....	4
ANT/ARC/GIS 284*	Global Positioning Systems .....	1
ANT/ARC/ GIS 286* or DAR 120	Computer Cartography and CAD .....	3
ARC, CIS, DAR, Elective	Electronic and Digital Field Mapping .....	4
	Applied Computer Graphics	
	Elective in consultation with Archeology faculty advisor .....	3
<b>Total credits as displayed .....</b>		<b>27-28</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Field Archaeology of the Southwest — Certificate for Direct Employment

Dig into the past by studying archaeological fieldwork. Courses are designed for those seeking professional skills, those working toward an Anthropology degree with an archaeology emphasis, as well as for those with a general interest in archaeology. This program emphasizes hand-on archaeological fieldwork and laboratory experience and applied skills in archaeology, particularly related to the prehistory of southern Arizona.

### What can I do with this certificate?

**Career Options:** Seek employment in entry-level archaeology positions.

**Academic Options:** Students planning to transfer to a four-year archaeology degree program should pursue an Anthropology AA degree simultaneously with this certificate.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-31/45.0301-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6905

Program/Major/Concentration Codes: **CRTSWC/SWC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
AIS/ANT/ARC 205	Introduction to Southwestern Prehistory .....	3
ANT/ARC 101	Human Origins and Prehistory .....	3-4
or ANT/ ARC 204IN	Human Evolution: Ape Men, Cave Women and Missing Links	
ANT 102	Introduction to Cultural Anthropology and Linguistics .....	3
or ANT 112	Exploring Non-Western Cultures	
ANT/ARC/GIS 181	Global Positioning Systems Basics .....	1
ANT/ARC 225*	Principles of Archaeology .....	3
ANT/ARC/GEO/ GIS 265	Mapping Concepts .....	1
ANT/ARC 275	Archaeological Excavation I .....	4
ANT/ARC 276*	Archaeological Surveying I .....	4
<b>Total credits as displayed .....</b>		<b>22-23</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# Arizona General Education Curriculum

## Arizona General Education Curriculum (AGEC) — Certificate for Transfer

Complete lower-division general education requirements for transfer to ASU, NAU or UA.

It is strongly recommended that students complete the Associate of Arts, Associate of Business Administration, or Associate of Science degrees in addition to the AGEC before transferring. The AGEC without a degree is not eligible for financial aid.

### What can I do with this certificate?

**Academic Options:** Continue your studies by taking additional transfer coursework to complete an Associate of Arts, Associate of Business Administration, or Associate of Science degree, then transfer to a college or university.

**Locations:** All campuses

**Contact Information:** Contact any campus Student Services office ([www.pima.edu/current-students/advising/contact-us.html](http://www.pima.edu/current-students/advising/contact-us.html))

### Required Courses

At least 35 credits and 11 courses are required for this certificate.

Complete an AGEC-A for Associate of Arts, Associate of Fine Arts, and Bachelor of Arts degrees; complete an AGEC-B for Associate of Business and Bachelor of Science in Business degrees; complete an AGEC-S for Associate of Science and most Bachelor of Science degrees.

### Arizona General Education Curriculum (AGEC) Requirements - A grade of C or better is required in all courses for graduation.

*Course lists for each General Education category listed below can be found starting on page 74.*

English Composition (2 courses) .....	6
Mathematics (1 course) .....	3-5
Biological and Physical Sciences (2 courses w/ labs) .....	8-10
Humanities and Fine Arts (2 courses) .....	6
Social and Behavioral Sciences (2 courses) .....	6
Other Requirements (2 courses) .....	6
Special Requirements	
The I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Total credits as displayed .....</b>	<b>35-39</b>

# Arts

Gain knowledge and experience working in a variety of media.

## Associate Degrees:

- Applied Arts
- Associate of Arts: Visual Arts Concentration
- Associate of Arts: Dance Concentration
- Associate of Arts: Music Concentration
- Associate of Arts: Theater Concentration

## Applied Arts

### Applied Arts — Associate Applied Arts Degree for Direct Employment

Gain experience working in a variety of art media or focus on a single area of interest. Learn art history or principles of effective art education. Students interested in digital and film arts should pursue a degree or certificate in that subject area. Students interested in transferring to a university should complete an Associate of Fine Arts degree, concentrating in visual arts, dance, music or theater.

#### What can I do with this degree?

**Career Options:** Work as an artist, artist assistant or entry-level art instructor.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)).

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6882

Program/Major Codes: AAAAPPLDARTS/APT

#### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	†
ART 130 and 131 fulfill this requirement.	
Computer and Information Literacy Requirement .....	1-3
Special Requirement	
ART 130 fulfills this requirement.	
<b>Subtotal .....</b>	<b>13-15†</b>

Course Number	Course Title	Credit Hours
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#### Required Core Courses - A grade of C or better is required for graduation.

ART 100	Basic Design .....	3
ART 110*	Drawing I SUN# ART 1111 .....	3
ART 115*	Color and Composition .....	3
ART 120*	Sculptural Design SUN# ART1115 .....	3
ART 130	Art and Culture: Prehistoric Through Gothic SUN# ART 1101.....	3
ART 131	Art and Culture: Late Gothic Through Modern Periods SUN# ART 1102.....	3
ART/FDC 288	Portfolio Preparation .....	3
<b>Subtotal .....</b>		<b>21</b>

**Art Electives: - A grade of C or better is required for graduation.**

Complete courses in any combination from any of the following categories.....	30
<b>Art History and Art Education</b>	
ART 105	Exploring Art and Visual Culture ..... 3
ART 136	Body and Art ..... 3
ART 250*	Gallery and Museum Practices ..... 3
ART 2961*	Independent Study in ART: Art History ..... 3
<b>Ceramics</b>	
ART 160*	Ceramics I ..... 3
ART 260*	Ceramics II ..... 3
ART 261*	Ceramics III ..... 3
ART 262*	Ceramics IV ..... 3
ART 29612*	Independent Study in ART: Ceramics ..... 3
<b>Digital Arts</b>	
ART/DAR 128*	Digital Photography I..... 4
DAR 103	Introduction to Digital Video and Film Arts ..... 3
DAR 120	Applied Computer Graphics ..... 4
DAR 122*	DeskTop Graphics: Adobe Illustrator ..... 4
DAR 146*	Lighting for Photography I ..... 4
DAR 173	History of American Cinema ..... 3
DAR 226*	DeskTop Publishing for Digital Arts: Adobe InDesign ..... 4
DAR 246*	Lighting for Photography II ..... 4
<b>Fashion Design</b>	
FDC 110	Clothing Construction I ..... 3
FDC 111*	Clothing Construction II ..... 3
FDC 112*	Pattern Fitting ..... 3
FDC 121*	Flat Pattern Making I ..... 3
FDC 122	History of Clothing ..... 3
FDC 123*	Computer Pattern-Making I ..... 3
FDC 126	Textiles ..... 3
FDC 131	Fashion Styling ..... 3
FDC 135*	Fashion Show/Event Planning ..... 3
FDC 141	Introduction to Fashion Design ..... 3
FDC 144*	Fashion Drawing ..... 3
FDC 211*	Clothing Construction III ..... 3
FDC 212*	Tailoring: Jackets ..... 3
FDC 213*	Tailoring: Pants and Shirts ..... 3
FDC 214*	Bridal and Formal Wear ..... 3
FDC 215*	Sewing with Knits ..... 3
FDC 221*	Flat Patternmaking II ..... 3
FDC 223*	Computer Pattern-Making II ..... 3
FDC 241*	Draping I ..... 3
FDC 242*	Draping II ..... 3
FDC 245	Digital Fashion Design ..... 3
<b>Fiber Art</b>	
ART 180*	Weaving I: Four-Harness Loom ..... 3
ART 181*	Mixed Media Fibers ..... 3
ART 280*	Weaving II ..... 3
ART 29618*	Independent Study in ART: Fibers ..... 3

**Metalwork**

ART 123*	Lost Wax Sculpture Casting	3
ART 170*	Metalwork I: Jewelry	3
ART 175*	Ferrous Metalwork: Blacksmithing, Tool Making/Knife Making	3
ART 270*	Metalwork II: Jewelry	3
ART 296I3*	Independent Study in ART: Metals	3

**Painting and Drawing**

ART 106	Survey of Painting Materials and Techniques	3
ART 109	Watercolor Painting	3
ART 210*	Drawing II	3
ART 213*	Life Drawing I	3
ART 215*	Painting I	3
ART 217*	Painting II	3
ART 223*	Life Drawing II	3
ART 227*	Painting III	3
ART 296I4*	Independent Study in ART: Painting, Drawing, and Design	3

**Photography**

ART/DAR 128*	Digital Photography I	4
ART 140*	Photography I	3
ART 141*	Photography II	3
ART 146*	Lighting for Photography I	4
ART 147*	Alternative Processes in Photography	3
ART 232*	Digital Photography II	4
ART 246*	Lighting for Photography II	4
ART 248*	Individual Projects in Photography	3
ART 296I5*	Independent Study in ART: Photography	3

**Printmaking**

ART 212*	Printmaking I	3
ART 214*	Printmaking II	3
ART 216*	Screenprinting I	3
ART 218*	Screenprinting II	3
ART 219*	Printmaking III	3
ART 249*	Artists' Books	3
ART 296I6*	Independent Study in ART: Printmaking	3

**Sculpture/Glass Art**

ART 121*	Figure Sculpture	3
ART 220*	Sculpture	3
ART 265*	Furnace Glassblowing I	3
ART 266*	Furnace Glassblowing II	3
ART 296I7*	Independent Study in ART: Sculpture	3
ART 296I9*	Independent Study in ART: Glass	3

**Other**

MKT 139 or BUS 100	Retailing Introduction to Business	3
WLD 120	Welding for Metal Sculpture	4

**Subtotal** ..... **30**

**Total credits as displayed** ..... **64-66**

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



## Fine Arts

Gain knowledge and experience working in a variety of media.

- Associate of Arts: Visual Arts Concentration
- Associate of Arts: Music Concentration
- Associate of Arts: Theater Concentration
- Associate of Arts: Dance Concentration

### Visual and Performing Arts — Associate of Fine Arts for Transfer — Visual Arts Concentration

Study a variety of art forms or learn art history while preparing to transfer to a 4-year university.

#### *What can I do with this degree?*

**Career Options:** Work as an artist, art educator or in art or performance production.

**Academic Options:** Transfer to a university to complete a bachelor's degree.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6882

Program/Major/Concentration Codes: **AFAFINEARTS/AFA/AFAV**

#### **Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts .....	†
ART 100 and 130 fulfill this requirement.	
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	6
Other Requirements .....	†
ART 110 and 131 fulfill requirement.	
Special Requirements	
ART 130 fulfills the I and G requirements. The C requirement should be fulfilled by a course in the Social and Behavioral Sciences category.	
<b>Subtotal .....</b>	<b>23</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ART 100	Basic Design .....	3
ART 110*	Drawing I SUN# ART 1111 .....	3
ART 115*	Color and Composition .....	3
ART 120*	Sculptural Design SUN# ART 1115 .....	3
ART 130	Art and Culture: Prehistoric Through Gothic SUN# ART 1101 .....	3
ART 131	Art and Culture: Late Gothic Through Modern Periods SUN# ART 1102 .....	3
ART 210*	Drawing II .....	3
or ART 213*	Life Drawing I	
<b>Subtotal .....</b>		<b>21</b>

**Required Support Courses- A grade of C or better is required for graduation.****Art Electives**

Complete five or six courses for a minimum of 16 credits from any of the following categories: ..... 16  
 (These courses cannot double-dip with Required Core Courses)

**Art in the Craft Media**

ART 160*	Ceramics I .....	3
ART 170*	Metalwork I: Jewelry .....	3
ART 180*	Weaving I: Four-Harness Loom .....	3
ART 181*	Mixed Media Fibers .....	3
ART 260*	Ceramics II .....	3
ART 261*	Ceramics III .....	3
ART 262*	Ceramics IV .....	3
ART 270*	Metalwork II: Jewelry .....	3
ART 280*	Weaving II .....	3
ART 296I2*	Independent Study in ART: Ceramics .....	3
ART 296I8*	Independent Study in ART: Fibers .....	3

**Photography**

ART/DAR128*	Digital Photography I .....	4
ART 140*	Photography I .....	3
ART 141*	Photography II .....	3
ART 147*	Alternative Processes in Photography .....	3
ART 248*	Individual Projects in Photography .....	3
ART 296I5*	Independent Study in ART: Photography .....	3

**Art History**

ART 136	Body and Art .....	3
ART 296I1*	Independent Study in ART: Art History .....	3

**Drawing, Painting, and Sculpture**

ART 106	Survey of Painting Materials and Techniques .....	3
ART 109	Watercolor Painting .....	3
ART 121*	Figure Sculpture .....	3
ART 210*	Drawing II (If not taken as a Required Core Course) .....	3
ART 213*	Life Drawing I (If not taken as a Required Core Course) .....	3
ART 215*	Painting I .....	3
ART 217*	Painting II .....	3
ART 220*	Sculpture .....	3
ART 296I4*	Independent Study in ART: Painting, Drawing, and Design .....	3
ART 296I7*	Independent Study in ART: Sculpture .....	3

**Printmaking**

ART 212*	Printmaking I .....	3
ART 214*	Printmaking II .....	3
ART 216*	Screenprinting I .....	3
ART 218*	Screenprinting II .....	3
ART 219*	Printmaking III .....	3
ART 249*	Artists' Books .....	3

**Subtotal .....** **16**

**Total credits as displayed .....** **60**

† Core or support course(s) fulfill this requirement.

‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Visual and Performing Arts — Associate of Fine Arts for Transfer — Dance Concentration

Learn to teach or perform dance while preparing to transfer to a 4-year university.

### What can I do with this degree?

**Career Options:** Work as a dancer or dance instructor.

**Academic Options:** Transfer to a university to complete a bachelor's degree.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: Dance 206-6826

Program/Major/Concentration Codes: **AFAFINEARTS/AFA/AFAD**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts..... †	†
Arts & Humanities Support Courses fulfill this requirement	
Biological and Physical Sciences .....	8
Mathematics.....	3
Social and Behavioral Sciences .....	6
Other Requirements** .....	6
Special Requirements	
The I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>29</b>

### Required Core Courses - A grade of C or better is required for graduation.

DNC 107	Dance Conditioning .....	2
DNC 150	Ballet I .....	2
DNC 151*	Ballet II .....	2
DNC 166	Modern Dance I .....	2
DNC 167*	Modern Dance II .....	2
DNC 180*	Choreography .....	2
DNC 200	Dance Appreciation and History .....	3
DNC 219	Jazz Dance I .....	2
DNC 220*	Jazz Dance II .....	2
DNC 230*	Rhythms for Dance .....	2
DNC 269*	Dance Production and Performance .....	3
DNC 280	Business for Dance Careers .....	3
<b>Subtotal .....</b>	<b>27</b>	

### Required Support Courses

Arts & Humanities Electives.....	6
Complete two classes so that both the Arts and the Humanities AGEC requirements are completed	
MUS 151	Exploring Music
MUS 160	Popular Music in America
THE 105*	Theater Appreciation
Dance Electives	
Complete one class from the following: .....	
DNC 152*	Ballet III
DNC 168*	Modern Dance III
DNC 221	Jazz Dance III
<b>Subtotal .....</b>	<b>8</b>
<b>Total credits as displayed .....</b>	<b>64</b>

† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Visual and Performing Arts — Associate of Fine Arts for Transfer — Music Concentration

Study music theory and performance while preparing to transfer to a four-year university.

### What can I do with this degree?

**Career Options:** Work as a musician or music teacher.

**Academic Options:** Transfer to a university to complete a bachelor's degree.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

**Lead Faculty:** Music 206-6826

**Special Admissions Program:** You are not fully admitted to this program until you have auditioned and have been officially admitted to the program. See the website or an advisor for details.

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts..... †	
MUS 125 and 201 fulfill this requirement.	
Biological and Physical Sciences .....	8
Mathematics.....	3
Social and Behavioral Sciences .....	6
Other Requirements .....	3
MUS 202 fulfills 3 credits of this requirement. Complete a non-Humanities and Fine Arts course from this category.	
Special Requirements	
The I, C, and G requirement should be fulfilled by courses in the above categories.	
<b>Subtotal .....</b>	<b>26¥</b>

### Required Core Courses - A grade of C or better is required for graduation.

MUP 161-168*	Studio Instruction: I (Major) .....	2
MUP 171-178*	Studio Instruction: II (Major) .....	2
MUP 261-268*	Studio Instruction: III (Major) .....	2
MUP 271-278*	Studio Instruction: IV (Major) .....	2
MUS 125*	Structure of Music I .....	3
MUS 126*	Structure of Music II .....	3
MUS 127*	Aural Perception I .....	2
MUS 129*	Aural Perception II .....	2
MUS 141	Piano Class I (Majors) .....	2
MUS 142*	Piano Class II (Majors) .....	2
MUS 143*	Piano Class III (Majors) .....	2
MUS 144*	Piano Class IV (Majors) .....	2
MUS 201*	History and Literature of Music I .....	3
MUS 202*	History and Literature of Music II .....	3
MUS 223*	Structure of Music III SUN# MUS 2222** .....	3
MUS 224*	Aural Perception III SUN# MUS 2222** .....	2
MUS 226*	Structure of Music IV SUN# MUS 2223*** .....	3
MUS 228*	Aural Perception IV SUN# MUS 2223*** .....	2
<b>Subtotal .....</b>		<b>42</b>

**Core Options: - A grade of C or better is required for graduation.**

Complete six credits from the following. A course may be taken more than once to fulfill this requirement:

MUS 116*	Pima Community College Orchestra I .....	2
MUS 117*	Pima Community College Orchestra II .....	2
MUS 120*	Concert Band I .....	3
MUS 121*	Concert Band II .....	3
MUS 130*	Chorale (SATB) .....	3
MUS 131*	College Singers (SATB) .....	3
<b>Subtotal</b> .....		<b>6</b>
<b>Total credits as displayed</b> .....		<b>74</b>

† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Both MUS 223 and 224 must be completed in order to get the MUS 2222 SUN designation.

\*\*\* Both MUS 226 and 228 must be completed in order to get the MUS 2223 SUN designation.

## Visual and Performing Arts — Associate of Fine Arts for Transfer — Theater Concentration

Study acting and theater production while preparing to transfer to a 4-year university.

### What can I do with this degree?

**Career Options:** Work as an actor or in performance production.

**Academic Options:** Transfer to a university to complete a bachelor's degree.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: Theater 206-6720

Program/Major/Concentration Codes: **AFAFINEARTS/AFA/AFAT**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts .....	†
THE 105 and 140 fulfill this requirement.	
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	6
Other Requirements .....	6
Special Requirements	
THE 105 fulfills the C requirement. The I and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal</b> .....	<b>29¥</b>



Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
THE 104	Voice and Movement for the Actor .....	3
THE 105*	Theater Appreciation .....	3
THE 111	Stagecraft .....	3
THE 113	Stagecraft Crew .....	1
THE 125*	Theater Production .....	2
THE 140	History of Theater to the 18th Century .....	3
THE 149	Introduction to Acting I .....	3
THE 151*	Introduction to Acting II .....	3
THE 220	Stage Lighting .....	3
THE 245	Principles of Dramatic Structure SUN# THE 2220.....	3
THE ELEC	Any transferable THE course .....	3
<b>Subtotal .....</b>		<b>30</b>
<b>Core Options: - A grade of C or better is required for graduation.</b>		
Complete one of the following options after consulting with a theatre department faculty advisor or counselor:		
<b>Option 1</b>		
THE 118	Basic Theater Graphics .....	3
THE 223	Scene Design .....	3
<b>Option 2</b>		
THE 250*	Acting: Auditioning for Theater .....	3
THE 251*	Acting: Shakespeare and Classical Literature .....	3
<b>Subtotal .....</b>		<b>6</b>
<b>Total credits as displayed .....</b>		<b>65</b>

† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Automotive Technology

Begin a career as an auto mechanic, or expand your skills and attain higher-level positions. Classes are hands-on and self-paced. The program is accredited by the National Automotive Technician Education Foundation (NATEF).

### Automotive Mechanics — Certificate for Direct Employment

From engine diagnosis and repair to electrical fundamentals, steering and alignment, and brakes, cover the basics of auto mechanics.

#### What can I do with this certificate?

**Career Options:** Entry-level auto mechanic or technician.

**Academic Options:** Continue your studies by taking additional courses toward the Automotive Technology AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-37/47.0604-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Auto Lab: 520-206-7190

Program/Major Codes: **CRTAUTOMECHS/AUM**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
AUT 100	Small Engine Troubleshooting & Repair .....	3
AUT 101	Automotive Maintenance .....	3
AUT 105	Light Line Maintenance .....	3
AUT 120	Engine Diagnosis and Repair .....	3
AUT 128	Automotive Electrical Fundamentals and Applications .....	3
AUT 139	Automotive Steering and Alignment Systems .....	3
AUT 140	Automotive Brakes Diagnosis and Repair .....	3
<b>Total credits as displayed .....</b>		<b>21</b>

### Automotive Technology — Associate of Applied Science Degree for Direct Employment

From steering and suspension to engines and electrical systems, understand car repair inside and out. Master the basics and prepare for entry-level positions or choose additional advanced courses.

#### What can I do with this degree?

**Career options:** Auto mechanic or technician, service writer, parts specialist or auto sales positions.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Auto Lab: 520-206-7190

Program/Major Codes: **AASAUTOTECHN/AUT**

**General Education Requirement - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
<b>Subtotal .....</b>	<b>19-21</b>

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
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**Required Core Courses - A grade of C or better is required for graduation.**

AUT 100	Small Engine Troubleshooting and Repair .....	3
AUT 101	Automotive Maintenance .....	3
AUT 105	Light Line Maintenance .....	3
AUT 120	Engine Diagnosis and Repair .....	3
AUT 122	Engine Remove and Install .....	3
AUT 124	Automotive Diesel Engine Tune-Up .....	3
AUT 126	Engine Performance and Driveability Troubleshooting .....	3
AUT 128	Automotive Electrical Fundamentals and Applications .....	3
AUT 129	Automotive Electrical Accessories .....	3
AUT 132	Automotive Drivetrain Removal and Replacement .....	3
AUT 133	Automatic Transmission/Transaxle Service and Rebuilding .....	3
AUT 136	Automotive Manual Transmission and Driveline Service .....	3
AUT 138	Automotive Suspension Systems .....	3
AUT 139	Automotive Steering and Alignment Systems .....	3
AUT 140	Automotive Brakes Diagnosis and Repair .....	3
AUT 142	Automotive Heating, Ventilation, and Air Conditioning .....	3
<b>Subtotal .....</b>		<b>48</b>
<b>Total credits as displayed .....</b>		<b>67-69</b>

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

# Aviation Technology

## Aviation Technology — Associate of Applied Science for Direct Employment

Gain skills and knowledge of Airframe and Powerplant, Structural Repair, or Avionics.

The Airframe and Powerplant courses are taught per Federal Aviation Regulations Part 147 for FAA Aviation Maintenance Technician training to allow a student to be qualified for Airframe and Powerplant certification. Aviation Structural Repair has been offered as specialty training and does not fall under FAA Part 147 guidelines. Instead it is an industry directed curriculum preparing students to perform heavy structural repairs that exceed the requirements of Part 147 Airframe and Powerplant training.

**Before enrolling in this program**, students must attend an Aviation Technology orientation and submit the following:

- Negative alcohol and drug screening test.

### What can I do with this degree?

**Career Options:** Work in the aircraft industry as an Aviation Maintenance Technician.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Aviation Technology Center

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-5910

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

*Students must complete the following program prerequisites (with grades posted) before they may begin the application process.*

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
With a grade of C or better: ICS 081, or MAT 086, or completion of MAT 089A through module 15, or Math assessment at MAT 092 or higher.....	0-3
<b>Subtotal</b> .....	<b>0-7</b>

**Students pursuing the Airframe Mechanics and/or Powerplant concentrations must complete the General Mechanics certificate courses before enrolling in the Airframe Mechanics or Powerplant courses.**

### General Education Requirements - A grade of C or better is required for graduation.

*Course lists for each General Education category listed below can be found starting on page 74.*

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	3
GTM 105V in the concentrations fulfills 3 credits in the Mathematics category. Complete a course from the Science or Critical Thinking category.	
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
<b>Subtotal</b> .....	<b>16-18</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

Complete one of the following concentrations..... 44-51.5

#### Airframe Mechanics

AVM 105	Aircraft Sheet Metal Repair .....	4
AVM 110\$	Aircraft Blueprint Reading .....	3
AVM 114\$	Regulatory Requirements.....	3
AVM 130*	Aircraft Composite Repair .....	4
AVM 202\$	Aircraft Safety .....	2.5

AVM 205§	Motion Dynamics .....	2.5
AVM 206§	Materials and Processes .....	2.5
AVM 207§	Weight and Balance .....	2.5
AVM 208§	Basic Electricity.....	4
AVM 209*	Intermediate Electricity .....	4
AVM 211	Alternate Structures .....	4
AVM 218	Airframe Rigging and Landing Gear Systems .....	2.5
AVM 219*	Airframe Inspections .....	2.5
AVM 223	Hydraulic and Pneumatic Power .....	2.5
AVM 224	Atmospheric Controls .....	2.5
AVM 225	Fire, Ice, Rain and Fuel Systems .....	2.5
GTM 105V*§	Applied Technical Mathematics for Aviation .....	3
<b>Subtotal .....</b>		<b>51.5</b>

**Powerplant**

AVM 110§	Aircraft Blueprint Reading .....	3
AVM 114§	Regulatory Requirements.....	3
AVM 202§	Aircraft Safety .....	2.5
AVM 205§	Motion Dynamics .....	2.5
AVM 206§	Materials and Processes .....	2.5
AVM 207§	Weight and Balance .....	2.5
AVM 208§	Basic Electricity.....	4
AVM 226*	Engine Electrical Systems .....	4
AVM 227	Engine Air Flow Systems .....	2.5
AVM 228	Aircraft Propellers .....	2.5
AVM 229	Engine Support Systems .....	2.5
AVM 231	Engine Principles, Monitoring, and Inspection .....	4
AVM 232	Reciprocating Engine Overhaul .....	4
AVM 233	Turbine Engines .....	4
AVM 234	Engine Fuel Metering and Operation .....	4
GTM 105V*§	Applied Technical Mathematics for Aviation .....	3
<b>Subtotal .....</b>		<b>50.5</b>

**Structural Repair**

AVM 102*	Structural Repair II .....	4
AVM 105	Aircraft Sheetmetal Repair .....	4
AVM 110	Aircraft Blueprint Reading .....	3
AVM 130*	Aircraft Composite Repair.....	4
AVM 150*	Structural Repair III .....	4
AVM 151*	Structural Repair IV .....	4
AVM 165	Aircraft Hardware and Fasteners .....	3
AVM 203*	Structural Repair V .....	4
AVM 204*	Structural Repair VI.....	4
AVM 205	Motion Dynamics .....	2.5
AVM 206	Materials and Processes .....	2.5
AVM 260*/260LB*	Advanced Composite Aircraft Repair II .....	4
GTM 105V*	Applied Technical Mathematics for Aviation .....	3
<b>Subtotal .....</b>		<b>46</b>

**Avionics Technician**

ATT 100*	Basic Electricity for Avionics .....	3
ATT 101	Avionics Familiarization .....	3
ATT 102	Aircraft Electrical Systems .....	3
ATT 103	Basics of Avionics Installation .....	3
ATT 104	Operating Systems I, Communication and Navigation .....	4
ATT 201*	Operating Systems II, GPS Navigation and Autopilot .....	3



ATT 202*	GPS Navigation and Autopilot Installation .....	5
ATT 203*	Avionics Test Equipment .....	4
ATT 204*	Glass Cockpit Installer .....	5
ATT 205*	Operating Systems III, Infrared and Weather Radar .....	3
ATT 206*	Infrared and Weather Radar Installation .....	5
GTM 105V*	Applied Technical Mathematics for Aviation .....	3
<b>Subtotal</b> .....		<b>.44</b>
<b>Total credits as displayed (not including program prerequisites)</b> .....		<b>.60-69.5</b>
<b>Total credits as displayed (including program prerequisites)</b> .....		<b>.60-76.5</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 † General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 § These courses are requirements for the Aircraft General Mechanics Certificate and must be completed prior to the other courses in the Airframe and the Powerplant concentrations.

## Advanced Aviation Technology — Certificate for Direct Employment

Gain basic skills in General Mechanics, Airframe Mechanics, Powerplant, or Structural Repair.

### What can I do with this certificate?

- Career Options:** Entry-level positions in aircraft building, maintenance and repair.
- Academic Options:** Take additional courses toward the Aviation Technology AAS degree.
- More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-38/47.0608-Gedt.html>
- Location:** Desert Vista Campus
- Department/Contact Information:**  
 Dean: 520-206-5250  
 Lead Faculty: 520-206-5910
- Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

Students must have completed the following prerequisites (with grades posted) before they may begin the application process.

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
MAT 086 with a grade of C or better or Math assessment at MAT 092 or higher.....	0-3
<b>Subtotal</b> .....	<b>0-7</b>

Students must complete the General Mechanics courses before enrolling in the Airframe Mechanics or Powerplant courses.

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
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### Required Core Courses - A grade of C or better is required for graduation.

Complete one of the following concentrations:

#### General Mechanics

AVM 110	Aircraft Blueprint Reading .....	3
AVM 114	Regulatory Requirements .....	3
AVM 202	Aviation Safety .....	2.5
AVM 205	Motion Dynamics .....	2.5
AVM 206	Materials and Processes .....	2.5
AVM 207*	Weight and Balance .....	2.5
AVM 208*	Basic Electricity .....	4
GTM 105V**	Applied Technical Mathematics for Aviation .....	3
<b>Subtotal</b> .....		<b>23</b>

**Airframe Mechanics**

AVM 105	Aircraft Sheetmetal Repair .....	4
AVM 130*	Aircraft Composite Repair .....	4
AVM 209*	Intermediate Electricity .....	4
AVM 211	Alternate Structures .....	4
AVM 218	Airframe Rigging and Landing Gear Systems .....	2.5
AVM 223	Hydraulic and Pneumatic Power .....	2.5
AVM 224	Atmospheric Controls .....	2.5
AVM 225	Fire, Ice, Rain, and Fuel Systems .....	2.5
<b>Subtotal</b> .....		<b>28.5</b>

**Powerplant**

AVM 226*	Engine Electrical Systems .....	4
AVM 227	Engine Airflow Systems .....	2.5
AVM 228*	Aircraft Propellers .....	2.5
AVM 229*	Engine Support Systems .....	2.5
AVM 231	Engine Principles, Monitoring and Inspection .....	4
AVM 232	Reciprocating Engine Overhaul .....	4
AVM 233	Turbine Engines .....	4
AVM 234*	Engine Fuel Metering and Operation .....	4
<b>Subtotal</b> .....		<b>27.5</b>

**Structural Repair**

AVM 102*	Structural Repair II .....	4
AVM 105	Aircraft Sheetmetal Repair .....	4
AVM 110	Aircraft Blueprint Reading .....	3
AVM 150*	Structural Repair III .....	4
AVM 151*	Structural Repair IV .....	4
AVM 165	Aircraft Hardware and Fasteners .....	3
AVM 203*	Structural Repair V .....	4
AVM 204*	Structural Repair VI .....	4
AVM260*/206LB*	Advanced Composite Aircraft Repair II .....	4
<b>Subtotal</b> .....		<b>34</b>

<b>Total credits as displayed (not including program prerequisites)</b> .....	<b>23-34</b>
<b>Total credits as displayed (including program prerequisites)</b> .....	<b>23-34</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* GTM 105V fulfills 3 credits in the Mathematics category in the AAS Aviation Technology degree.

## Avionics Technician — Certificate for Direct Employment

Master the broad range of skills needed to work with aircraft electronics including GPS systems, autopilot, communication systems, and weather radar. Learn avionics installation, operating systems, troubleshooting and system integration.

**Before enrolling in this program**, students must attend an Aviation Technology orientation and submit the following:

- Negative alcohol and drug screening test.

### What can I do with this certificate?

**Career Options:** Seek entry-level positions in aircraft avionics, diagnostics, maintenance and repair.

**Academic Options:** Continue your studies by taking additional courses toward the Aviation Technology AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-39/47.0609-Gedt.html>

**Location:** Aviation Technology Center

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-5910

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

Students must complete the following program prerequisites (with grades posted) before they may begin the application process.

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
With a grade of C or better: ICS 081, or MAT 086, or completion of MAT 089A through module 15, or Math assessment at MAT 092 or higher.....	0-3
<b>Subtotal</b> .....	<b>0-7</b>

### General Education Courses - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	†
GTM 105V fulfills 3 credits of this requirement.	
<b>Subtotal</b> .....	<b>3</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

ATT 100*	Basic Electricity for Avionics .....	3
ATT 101*	Avionics Familiarization .....	3
ATT 102*	Aircraft Electrical Systems .....	3
ATT 103*	Basics of Avionics Installation .....	3
ATT 104*	Operating Systems I, Communication and Navigation .....	4
ATT 201*	Operating Systems II, GPS Navigation and Autopilot .....	3
ATT 202*	GPS Navigation and Autopilot Installation .....	5
ATT 203*	Avionics Test Equipment .....	4
ATT 204*	Glass Cockpit Installer .....	5
ATT 205*	Operating Systems III, Infrared and Weather Radar .....	3
ATT 206*	Infrared and Weather Radar Installation .....	5
GTM 105V*	Applied Technical Math for Aviation.....	3
<b>Subtotal</b> .....		<b>44</b>
<b>Total credits as displayed (not including program prerequisites)</b> .....		<b>47</b>
<b>Total credits as displayed (including program prerequisites)</b> .....		<b>47-54</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Aviation Future Enrollment Programs

These programs have been submitted to the U.S. Department of Education for approval for Title IV Federal Financial Aid. At the time this catalog was submitted for publication, they had not yet been approved.

Students are not currently being admitted to these programs.

Please check the online program displays for changes to the enrollment and financial aid status.

## Aircraft General Mechanics — Certificate for Direct Employment

Gain basic skills in General Mechanics.

**Before enrolling in this program,** students must attend an Aviation Technology orientation and submit the following:

- Negative alcohol and drug screening test.

### What can I do with this certificate?

**Career Options:** Gain a position as a Panel Technician for an Aircraft facility. Combine with the Airframe Mechanics and/or Powerplant certificates for an entry-level position in aircraft building, maintenance and repair.

**Academic Options:** Take additional courses toward the Aviation Technology AAS degree.

**Location:** Aviation Technology Center

**Department/Contact Information:**

Dean: 206-7134

Lead Faculty: 206-5910

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

Students must complete the following program prerequisites (with grades posted) before they may begin the application process.

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
With a grade of C or better: ICS 081, or MAT 086, or completion of MAT 089A through module 15, or Math assessment at MAT 092 or higher.....	0-3
<b>Subtotal</b> .....	<b>0-7</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

AVM 110	Aircraft Blueprint Reading .....	3
AVM 114	Regulatory Requirements .....	3
AVM 202	Aviation Safety .....	2.5
AVM 205	Motion Dynamics .....	2.5
AVM 206	Materials and Processes .....	2.5
AVM 207	Weight and Balance .....	2.5
AVM 208	Basic Electricity .....	4
GTM 105V*	Applied Technical Mathematics for Aviation .....	3
<b>Total credits as displayed (not including program prerequisites)</b> .....		<b>23</b>
<b>Total credits as displayed (including program prerequisites)</b> .....		<b>23-30</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* GTM 105V fulfills 3 credits in the Mathematics category in the AAS Aviation Technology degree and the Airframe, Powerplant, Structural Repair, and Avionics certificates.

## Aircraft Airframe Mechanics — Certificate for Direct Employment

Gain basic skills in Airframe Mechanics.

**Before enrolling in this program**, students must attend an Aviation Technology orientation and submit the following:

- Negative alcohol and drug screening test.

### What can I do with this certificate?

**Career Options:** Combine with the General Mechanics (and Powerplant) certificates for an entry-level position in aircraft building, maintenance and repair.

**Academic Options:** Take additional courses toward the Aviation Technology AAS degree.

**Location:** Aviation Technology Center

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-5910

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

Students must complete the following program prerequisites (with grades posted) before they may begin the application process.

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
With a grade of C or better: ICS 081, or MAT 086, or completion of MAT 089A through module 15, or Math assessment at MAT 092 or higher.....	0-3
<b>Aircraft General Mechanics Certificate .....</b>	<b>23</b>
<b>Subtotal .....</b>	<b>23-30</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
AVM 105	Aircraft Sheetmetal Repair .....	4
AVM 130*	Aircraft Composite Repair .....	4
AVM 209*	Intermediate Electricity .....	4
AVM 211	Alternate Structures .....	4
AVM 218	Airframe Rigging and Landing Gear Systems .....	2.5
AVM 219*	Airframe Inspections .....	2.5
AVM 223	Hydraulic and Pneumatic Power .....	2.5
AVM 224	Atmospheric Controls .....	2.5
AVM 225	Fire, Ice, Rain, and Fuel Systems .....	2.5
<b>Total credits as displayed (not including program prerequisites) .....</b>		<b>28.5</b>
<b>Total credits as displayed (including program prerequisites) .....</b>		<b>51.5-58.5</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



## Aircraft Powerplant Mechanics — Certificate for Direct Employment

Gain basic skills in Powerplant.

**Before enrolling in this program**, students must attend an Aviation Technology orientation and submit the following:

- Negative alcohol and drug screening test.

### What can I do with this certificate?

**Career Options:** Combine with the General Mechanics (and Powerplant) certificates for an entry-level position in aircraft building, maintenance and repair.

**Academic Options:** Take additional courses toward the Aviation Technology AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-38/47.0608-Gedt.html>

**Location:** Aviation Technology Center

**Department/Contact Information:**

Dean: 206-7134

Lead Faculty: 206-5910

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

Students must complete the following program prerequisites (with grades posted) before they may begin the application process.

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
With a grade of C or better: ICS 081, or MAT 086, or completion of MAT 089A through module 15, or Math assessment at MAT 092 or higher.....	0-3
<b>Aircraft General Mechanics Certificate .....</b>	<b>23</b>
<b>Subtotal .....</b>	<b>23-30</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
AVM 226*	Engine Electrical Systems .....	4
AVM 227	Engine Airflow Systems.....	2.5
AVM 228	Aircraft Propellers .....	2.5
AVM 229	Engine Support Systems .....	2.5
AVM 231	Engines, Principles, Monitoring and Inspection .....	4
AVM 232	Reciprocating Engine Overhaul .....	4
AVM 233	Turbine Engines .....	4
AVM 234	Engine Fuel Metering and Operation .....	4
<b>Total credits as displayed (not including program prerequisites) .....</b>		<b>27.5</b>
<b>Total credits as displayed (including program prerequisites) .....</b>		<b>50.5-57.5</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Aircraft Structural Repair — Certificate for Direct Employment

Gain basic skills in Structural Repair.

**Before enrolling in this program**, students must attend an Aviation Technology orientation and submit the following:

- Negative alcohol and drug screening test.

### What can I do with this certificate?

**Career Options:** An entry-level position in aircraft building, maintenance and repair.

**Academic Options:** Take additional courses toward the Aviation Technology AAS degree.

**Location:** Aviation Technology Center

**Department/Contact Information:**

Dean: 206-7134

Lead Faculty: 206-5910

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites

Students must complete the following program prerequisites (with grades posted) before they may begin the application process.

REA 091 with a grade of C or better or Reading assessment at REA 112 or higher .....	0-4
With a grade of C or better: ICS 081, or MAT 086, or completion of MAT 089A through module 15, or Math assessment at MAT 092 or higher.....	0-3
<b>Subtotal</b> .....	<b>0-7</b>

### General Education Courses - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	†
GTM 105V fulfills 3 credits of this requirement	
<b>Subtotal</b> .....	<b>3</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

AVM 102*	Structural Repair II .....	4
AVM 105	Aircraft Sheetmetal Repair .....	4
AVM 110	Aircraft Blueprint Reading .....	3
AVM 130	Aircraft Composite Repair .....	4
AVM 150*	Structural Repair III .....	4
AVM 151*	Structural Repair IV .....	4
AVM 165	Aircraft Hardners and Fasteners .....	3
AVM 203*	Structural Repair V .....	4
AVM 204*	Structural Repair VI .....	4
AVM 205	Motion Dynamics .....	2.5
AVM 206	Materials and Processes .....	2.5
AVM 260*/260LB*	Advanced Composite Aircraft Repair II .....	4
GTM 105V*	Applied Technical Math for Aviation.....	3
<b>Subtotal</b> .....		<b>46</b>
<b>Total credits as displayed (not including program prerequisites)</b> .....		<b>49</b>
<b>Total credits as displayed (including program prerequisites)</b> .....		<b>49-56</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Behavioral Health Services

Learn to work in a clinical behavioral health care setting and deliver basic behavioral health services. This program includes training within laboratory and clinical settings.

**Before enrolling in this program,** students must submit the following:

- Health Declaration
- Signed acknowledgement of receipt of drug screening policy
- Proof of health insurance (highly recommended)
- Residency affidavit
- Obtain an Arizona DPS Fingerprint Clearance Card.
- CPR/first aid certification (healthcare provider level)
- Proof of immunizations: Hepatitis B, MMR, Varicella, TDAP
- TB Test (negative result or a negative chest X-ray)

## Behavioral Health Services — Certificate for Direct Employment

### What can I do with this certificate?

**Career Options:** Seek an entry-level position or career advancement as a behavioral health specialist, human services technician, family advocate, or paraprofessional analyst in hospitals, behavioral health clinics, nursing care facilities, or nonprofit agencies.

**Academic Options:** Complete the additional courses needed to pursue a Social Services certificate or a Social Services degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-52/51.1502-Gedt.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5142

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Course - A grade of C or better is required for graduation.</b>		
BHS 132	Communication Skills in Behavioral Health Services .....	3
BHS 154*	Behavioral Health Lab and Safety Protocol .....	3
BHS 172	Clinical Behaviors .....	3
BHS 189LC*	Behavioral Health Clinic - Basic .....	1
BHS 250*	Case Documentation .....	2
SSE 128	Introduction to Behavioral Health .....	3
SSE 204*	Counseling in a Multicultural Setting .....	3
<b>Subtotal</b> .....		<b>18</b>
<b>Required Support Courses</b>		
CSA 100	Computer Literacy .....	1
<b>Subtotal</b> .....		<b>1</b>
<b>Total credits as displayed</b> .....		<b>19</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Bioscience Laboratory Technology

Learn the science fundamentals to work in a bioscience laboratory for immediate employment. Bioscience Laboratory Technicians set up, maintain, and clean laboratory instruments and equipment; as well as help prepare and conduct tests and experiments while documenting results and summarizing findings. Gain internship experience in both research and development in a science laboratory. Complete this program, including prerequisites, in one semester (excludes internship). Bioscience courses (BIO 112, 131, 132) are only offered in 8 week formats.

## Bioscience Laboratory Technician — Certificate for Direct Employment

Take courses to gain entry level work in a biological or medical science laboratory. Certificate includes courses to cover biology concepts while learning techniques and various processes to work in a laboratory setting.

### What can I do with this degree?

**Career Options:** Assist biological and medical scientists in laboratories and private practice to conduct laboratory tests and experiments.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)).

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 206-2180

Lead Faculty: 206-2299

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Program Prerequisites</b>		
MAT 097*	with a grade of C or better, or math assessment into MAT 151 or higher	0-3
<b>Subtotal</b>		<b>0-3</b>
<b>Required Core Courses: A grade of C or better is required for graduation.</b>		
BIO 156IN**	Introduction to Biology Allied Health	4
BIO 112*	Bioscience Laboratory Fundamentals	3
<b>Subtotal</b>		<b>7</b>
<b>Required Support Courses: A grade of C or better is required for graduation.</b>		
WRT 101* or WRT 107*	English Composition I SUN# ENG1101 English Composition I for Non-Native Speakers of English	3
CHM 130IN* or a score of 34 or higher on the CHM 130 assessment test (CMAS)	Fundamental Chemistry SUN# CHM1130	0-5
<b>Subtotal</b>		<b>3-8</b>
<b>Total credits as displayed (not including program prerequisites)</b>		<b>10-15</b>
<b>Total credits as displayed (including program prerequisites)</b>		<b>10-18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BIO 181IN may be substituted for BIO 156IN.

# Building and Construction Technologies

Learn how to construct and maintain buildings with courses in the specialized fields of the building and construction industry including facilities maintenance, electrical, plumbing, carpentry, HVAC-R, and construction management. Classes are hands-on and self-paced.

## Cabinetmaker — Certificate for Direct Employment

Get started in cabinetmaking and furniture construction. Courses cover tools, safety, cabinetmaking fundamentals, finishing techniques, and furniture design and construction.

### What can I do with this certificate?

**Career Options:** Apply for positions as a cabinetmaker, furniture builder, or start your own business.

**Academic Options:** Continue your studies by pursuing the Building and Construction Technologies AAS degree with a concentration in cabinetmaking.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-41/48.0703-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7137

Program/Major Codes: **CRTCМК/МКK**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 105**	Professionalism in Service, Construction Math, Basic Rigging	3
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading	3
BCT 146	Woodworking I	3
BCT 147*	Woodworking II	3
BCT 148*	Cabinetmaking I	3
BCT 149*	Cabinetmaking II	3
BCT 153	Finishing Techniques in Cabinet and Furniture Making	3
BCT 159*	Furniture Design and Construction	3
<b>Subtotal</b>		<b>24</b>
<b>Required Support Courses</b>		
CAD 101	Computer-Aided Drafting	4
<b>Subtotal</b>		<b>4</b>
<b>Total credits as displayed</b>		<b>28</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitutes for BCT 107



## Solar Installer — Certificate for Direct Employment

Learn the skills necessary to become a successful Solar Installer. Designed for individuals with building trades experience, this certificate provides Photovoltaic Installer preparation training for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Certification exam and the Photovoltaic Installer Advanced Certification exam.

### What can I do with this certificate?

**Career Options:** Obtain employment in the solar installation field.

**Academic Options:** Continue your studies by completing the Building and Construction Technologies AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-32/46.0399-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7137

Program/Major Codes: **CRTSIC/SIC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 105**	Professionalism in Service, Construction Math Basic Rigging	3
BCT 106*	Soldering and Brazing for BCT	4
BCT 107**	Hand and Power Tools, Blueprint Reading	3
BCT 135*	National Electric Code Electrical Wiring Applications	4
BCT 172*	Electrical I	4
SLR 101	Basic Photovoltaic Installation	3
SLR 130	Solar Hot Water Systems	4
<b>Total credits as displayed</b>		<b>25</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitute for BCT 107.

## Advanced Building and Construction Technologies — Certificate for Direct Employment

Advance to technician or journeyman levels. Choose from concentrations in HVAC-R, electrical systems, plumbing, or carpentry.

### What can I do with this certificate?

**Career Options:** Apply for entry-level positions in building and construction trades.

**Academic Options:** Continue your studies by taking classes in the Associate of Applied Science program.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-34/46.0401-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7137

Program/Major/Concentration Codes: **CRTBLDGCON-A/BCA/\*\*\*\*\*** (see concentration codes below)

### General Education Courses - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement	†
GTW 101 fulfills this requirement.	
Analysis and Critical Thinking Requirement	†
GTM 105 fulfills this requirement.	
<b>Subtotal</b>	<b>3¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 105**	Professionalism in Service, Construction Math, Basic Rigging	3
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading	3
<b>Subtotal</b>		<b>6</b>
<b>Required Support Courses</b>		
CSA 100*	Computer Literacy	1
GTM 105*	Applied Technical Mathematics	3
GTW 101	Writing for Trades and Technical Occupations	3
<b>Subtotal</b>		<b>7</b>
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete one of the following concentrations:		
Department chair or faculty advisor approval is recommended in the selection of the Concentration.		19-21
<b>Carpenter</b> (Concentration Code: BCTC)		
BCT 101	Principles of Construction	3
BCT 120*	Blueprint Reading for Construction	3
BCT 123	Concrete/Masonry	3
BCT 145*	Carpentry I	4
BCT 146	Woodworking I	3
BCT 147*	Woodworking II	3
<b>Subtotal</b>		<b>19</b>
<b>Electrician</b> (Concentration Code: BCTE)		
BCT 120*	Blueprint Reading for Construction	3
BCT 135*	National Electrical Code Residential Wiring Applications	4
BCT 172*	Electrical I	4
BCT 173*	Electrical II	4
BCT 174*	Electrical III	4
<b>Subtotal</b>		<b>19</b>
<b>HVAC-R Technician</b> (Concentration Code: BCTH)		
BCT 106*	Soldering and Brazing for BCT	4
BCT 130	EPA Clean Air Act: Section 608	1
BCT 132*	Residential and Industrial HVAC I	4
BCT 133*	Residential and Industrial HVAC II	4
BCT 134*	Residential and Industrial HVAC III	4
BCT 231*	Residential and Industrial HVAC IV	4
<b>Subtotal</b>		<b>21</b>
<b>Plumber</b> (Concentration Code: BCTP)		
BCT 106*	Soldering and Brazing for BCT	4
BCT 120*	Blueprint Reading for Construction	3
BCT 181*	Plumbing I	4
BCT 182*	Plumbing II	4
BCT 183*	Plumbing III	4
<b>Subtotal</b>		<b>19</b>
<b>Total credits as displayed</b>		<b>32-34</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitute for BCT 107.

## Building and Construction Technologies — Associate of Applied Science Degree for Direct Employment

Learn advanced construction skills, or prepare to transfer to NAU's Construction Management degree. Choose from one of the concentrations listed below.

### What can I do with this degree?

**Career Options:** Apply technical level positions in the building and construction trades.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7137

Program/Major/Concentration Codes: **AASBLDGCONST/BCT/\*\*\*\*** (see concentration codes below)

### General Education Courses - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement*** .....	3
GTM 105 fulfills 3 credits in the Mathematics category. Complete a course from the Science or Critical Thinking category.	
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	†
CSA 100 fulfills this requirement.	
Special Requirements	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> .....	<b>15</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

BCT 105**	Professionalism in Service, Construction Math, Basic Rigging .....	3
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading .....	3
<b>Subtotal</b> .....		<b>6</b>

### Required Support Courses

CSA 100*	Computer Literacy .....	1
GTM 105*	Applied Technical Mathematics .....	3
BCT Technical Electives:		
Complete 3 credit hours of BCT course work with the approval of the department chair or faculty advisor .....		3
<b>Subtotal</b> .....		<b>7</b>

### Core Concentrations - A grade of C or better is required for graduation.

Complete one of the following concentrations: ..... 32-36  
 Department chair or faculty advisor approval is recommended in the selection of the program option.

#### Building Management (Concentration Code: BCTB)

ACC 100	Practical Accounting Procedures .....	3
BCT 102	Building Materials .....	3
BCT 120*	Blueprint Reading for Construction .....	3
BUS 220	Legal Environment of Business .....	3
CSA 110*	Spreadsheets: Microsoft Excel .....	3
MGT 122*	Supervision .....	3

Technical Electives: .....	14
Complete 14 credit hours from the following list with the approval of the department chair or faculty advisor BCT and CAD	
<b>Subtotal</b> .....	<b>32</b>
<b>Cabinetmaker</b> (Concentration Code: BCTK)	
BCT 145*      Carpentry I .....	4
BCT 146      Woodworking I .....	3
BCT 147*      Woodworking II .....	3
BCT 148*      Cabinetmaking I .....	3
BCT 149*      Cabinetmaking II .....	3
BCT 153      Finishing Techniques in Cabinet and Furniture Making .....	3
BCT 159*      Furniture Design and Construction .....	3
CAD 101      Computer-Aided Drafting .....	4
Technical Electives .....	6
Complete 6 credits from BCT and/or CAD	
<b>Subtotal</b> .....	<b>32</b>
<b>Carpenter</b> (Concentration Code: BCTC)	
BCT 101      Principles of Construction .....	3
BCT 120*      Blueprint Reading for Construction .....	3
BCT 123      Concrete/Masonry .....	3
BCT 145*      Carpentry I .....	4
BCT 146      Woodworking I .....	3
BCT 147*      Woodworking II .....	3
BCT 245*      Carpentry II .....	4
BCT 286*      International Residential Code (IRC) I .....	3
BCT 287*      International Residential Code (IRC) II .....	3
Technical Electives .....	3
Complete 3 credits from BCT or CAD	
<b>Subtotal</b> .....	<b>32</b>
<b>Construction Management</b> (Concentration Code: BCTM)	
ACC 211***      Financial Accounting ( <i>was ACC 101</i> ) SUN# ACC 2201 .....	3
BCT 101      Principles of Construction .....	3
BCT 102      Building Materials .....	3
BCT 120*      Blueprint Reading for Construction .....	3
BCT 123      Concrete/Masonry .....	3
BCT 202      Construction Business Management .....	3
BCT 204*      Construction Surveying .....	3
BCT 286      International Residential Code (IRC) I .....	3
BCT 287*      International Residential Code (IRC) II .....	3
CAD 101      Computer-Aided Drafting .....	4
MGT 122*      Supervision .....	3
<b>Subtotal</b> .....	<b>34</b>
<b>Electrician</b> (Concentration Code: BCTE)	
BCT 135*      National Electrical Code Residential Wiring Applications .....	4
BCT 172*      Electrical I .....	4
BCT 173*      Electrical II .....	4
BCT 174*      Electrical III .....	4
BCT 184*      National Electrical Code I .....	3
BCT 271*      Electrical IV .....	4
BCT 272*      Electrical V .....	4
BCT 273*      Electrical VI .....	4
BCT 274*      Electrical VII .....	4
<b>Subtotal</b> .....	<b>35</b>

**Electrical Utilities Technology** (Concentration Code: BCTG)

BCT	120	Blueprint Reading for Construction .....	3
BCT	172	Electrical I .....	4
BCT	173	Electrical II .....	4
BCT	174	Electrical III .....	4
BCT	184	National Electrical Code I .....	3
BCT	202	Construction Business Management .....	3
BCT	265	Sustainability for the Building Trades .....	3
EUT	103	Generation Steam Systems .....	3
EUT	104	Overhead and Underground Systems, Hardware, and Equipment .....	4
EUT	106	Measuring Electricity .....	3
<b>Subtotal .....</b>			<b>34</b>

**HVAC-R Technician** (Concentration Code: BCTH)

BCT	104*	Introduction to Equipment Maintenance .....	4
BCT	106*	Soldering and Brazing for BCT .....	4
BCT	132*	Residential and Industrial HVAC I .....	4
BCT	133*	Residential and Industrial HVAC II .....	4
BCT	134*	Residential and Industrial HVAC III .....	4
BCT	231*	Residential and Industrial HVAC IV .....	4
BCT	232*	Residential and Industrial HVAC V .....	4
BCT	233*	Residential and Industrial HVAC VI .....	4
BCT	234*	Residential and Industrial HVAC VII .....	4
<b>Subtotal .....</b>			<b>36</b>

**Natural Gas Technology** (Concentration Code: BCTN)

BCT	202	Construction Business Management .....	3
BCT	265	Sustainability for Building Trades .....	3
BCT	286	International Residential Code (IRC) I .....	3
BCT	287*	International Residential Code (IRC) II .....	3
BUS	220	Legal Environment of Business .....	3
CAD	101	Computer-Aided Drafting .....	4
ICT	100	Energy Industry Fundamentals.....	3
ICT	101	Introduction to the Natural Gas Industry .....	3
MGT	110	Human Relations in Business and Industry .....	3
MGT	122*	Supervision .....	3
Technical Electives .....			3
Complete 3 credit hours from BCT, ICT or IMO.			
<b>Subtotal .....</b>			<b>34</b>

**Plumber** (Concentration Code: BCTP)

BCT	106*	Soldering and Brazing for BCT .....	4
BCT	120*	Blueprint Reading for Construction .....	3
BCT	181*	Residential and Industrial Plumbing I .....	4
BCT	182*	Residential and Industrial Plumbing II .....	4
BCT	183*	Residential and Industrial Plumbing III .....	4
BCT	236*	Residential and Industrial Plumbing IV .....	4
BCT	237*	Residential and Industrial Plumbing V .....	4
BCT	238*	Residential and Industrial Plumbing VI .....	4
BCT	239*	Residential and Industrial Plumbing VII .....	4
<b>Subtotal .....</b>			<b>35</b>

**Solar Installer** (Concentration Code: BCTI)

BCT	106	Soldering and Brazing for BCT .....	4
BCT	135*	National Electric Code Residential Wiring Applications .....	4
BCT	172*	Electrical I .....	4



BCT 202	Construction Business Management .....	3
BCT 265	Sustainability in Construction Installation .....	3
SLR 101	Beginning Photovoltaic Installation .....	3
SLR 102	Advanced Photovoltaic Installation .....	3
SLR 130*	Solar Hot Water Systems .....	4
Technical Electives	.....	4
	Complete 4 credits from BCT and/or CAD	
<b>Subtotal</b>	.....	<b>32</b>
<b>Total credits as displayed</b>	.....	<b>60-64</b>

† Core or support course(s) fulfill this requirement.  
 ¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitute for BCT 107.  
 \*\*\* Prerequisite MAT 092 or higher required for Construction Management concentration,

## Building and Construction Technologies Future Enrollment Programs

These programs have been submitted to the U.S. Department of Education for approval for Title IV Federal Financial Aid. At the time this catalog was submitted for publication, they had not yet been approved.

Students are not currently being admitted to these programs.

Please check the online program displays for changes to the enrollment and financial aid status.

### Carpenter — Certificate for Direct Employment

Learn to lay out, cut, fabricate, erect, install, and repair wooden structures and fixtures, using hand and power tools. Includes instruction in technical mathematics, framing, construction materials and selection, job estimating, blueprint reading, foundations and roughing-in, finish carpentry techniques, and applicable codes and standards.

#### What can I do with this certificate?

- Career Options:** Entry level Carpenter, Woodworker, Window and Door Installer, Trim Installer in the Building Construction Trades Industry.
- Academic Options:** Pursue the Building Construction Technologies Associate of Applied Science Degree..
- Location:** Downtown Campus
- Department/Contact Information:**  
 Dean: 206-7134  
 Lead Faculty: 206-7137  
 Program/Major/Concentration Codes: **CRTCPT/CPT**

#### General Education Courses - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 55.

Communication Requirement .....	†
GTW 101 fulfills this requirement	
Analysis and Critical Thinking Requirement .....	†
GTM 105 fulfills this requirement.	
<b>Subtotal</b> .....	<b>¥</b>

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
----------------------	---------------------	---------------------

#### Required Courses - A grade of C or better is required for graduation.

BCT 101	Principles of Construction .....	3
BCT 105**	Professionalism in Service, Construction Math, Basic Rigging. ....	3
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading.....	3

BCT 120*	Blueprint Reading for Construction .....	3
BCT 123	Concrete/Masonry.....	3
BCT 145*	Carpentry I.....	4
BCT 146	Woodworking I.....	3
BCT 147*	Woodworking II .....	3
<b>Subtotal</b> .....		<b>25</b>

### Required Support Courses

CSA 100*	Computer Literacy.....	1
GTM 105*	Applied Technical Mathematics .....	3
GTW 101*	Writing for Trades and Technical Occupations .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>32</b>

† Required Courses fulfill this requirement.

¥ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitutes for BCT 107.

## Electrician — Certificate for Direct Employment

Learn to install, operate, maintain, and repair electric apparatus and systems such as residential, commercial, and industrial electric-power wiring; and DC and AC motors, controls, and electrical distribution panels. Includes the principles of electronics and electrical systems, wiring, power transmission, safety, industrial and household appliances, job estimation, electrical testing and inspection, and applicable codes and standards.

### What can I do with this certificate?

**Career Options:** Apply for entry-level positions in building and construction trades.

**Academic Options:** Pursue the Building Construction Technologies Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 206-7134

Lead Faculty: 206-7137

Program/Major/Concentration Codes: **CRTELE/ELE**

### General Education Courses - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 55.

Communication Requirement .....	†
GTW 101 fulfills this requirement .....	
Analysis and Critical Thinking Requirement .....	†
GTM 105 fulfills this requirement .....	
<b>Subtotal</b> .....	<b>¥</b>

Course Number	Course Title	Credit Hours
---------------	--------------	--------------

### Required Courses - A grade of C or better is required for graduation.

BCT 105**	Professionalism in Service, Construction Math, Basic Rigging.....	3
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading.....	3
BCT 120*	Blueprint Reading for Construction .....	3
BCT 135*	National Electrical Code Residential Wiring Applications .....	4
BCT 172*	Electrical I.....	4
BCT 173*	Electrical II .....	4
BCT 174*	Electrical III.....	4
<b>Subtotal</b> .....		<b>25</b>

**Required Support Courses**

CSA 100*	Computer Literacy .....	1
GTM 105*	Applied Technical Mathematics .....	3
GTW 101*	Writing for Trades and Technical Occupations .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>32</b>

† Required Courses fulfill this requirement.

¥ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitutes for BCT 107.

**HVAC-R Technician — Certificate for Direct Employment**

Learn to repair, install, service and maintain the operating condition of heating, air conditioning, and refrigeration systems. Includes instruction in diagnostic techniques, the use of testing equipment and the principles of mechanics, electricity, and electronics as they relate to the repair of heating, air conditioning and refrigeration systems.

**What can I do with this certificate?**

**Career Options:** HVAC/R Technician, HVAC/R system installations in the Building Construction Trades Industry.

**Academic Options:** Continue your studies by taking classes in the Associate of Applied Science program.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 206-7134

Lead Faculty: 206-7137

Program/Major/Concentration Codes: **CRTHVA/HVA**

**General Education Courses - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 55.

Communication Requirement .....	†
GTW 101 fulfills this requirement	
Analysis and Critical Thinking Requirement .....	†
GTM 105 fulfills this requirement.	
<b>Subtotal</b> .....	<b>¥</b>

Course Number	Course Title	Credit Hours
---------------	--------------	--------------

**Required Core Courses - A grade of C or better is required for graduation.**

BCT 104	Introduction to Equipment Maintenance .....	4
BCT 105**	Professionalism in Service, Construction Math, Basic Rigging. ....	3
BCT 106*	Soldering and Brazing for BCT .....	4
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading. ....	3
BCT 130	EPA Clean Air Act: Section 608 .....	1
BCT 132*	Residential and Industrial HVAC I. ....	4
BCT 133*	Residential and Industrial HVAC II .....	4
BCT 134*	Residential and Industrial HVAC III. ....	4
BCT 231*	Residential and Industrial HVAC IV .....	4
<b>Subtotal</b> .....		<b>31</b>

**Required Support Courses**

CSA 100*	Computer Literacy .....	1
GTM 105*	Applied Technical Mathematics .....	3
GTW 101*	Writing for Trades and Technical Occupations .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>38</b>

† Required course(s) fulfill this requirement.  
 ¥ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**Plumber — Certificate for Direct Employment**

Preparation to practice as licensed plumbers by applying technical knowledge and skills to lay out, assemble, install, and maintain piping fixtures and systems for steam, natural gas, oil, hot water, heating, cooling, drainage, lubricating, sprinkling, and industrial processing systems in home and business environments. Includes instruction in source determination, water distribution, wastewater removal, pressure adjustment, basic physics, technical mathematics, blueprint reading, pipe installation, pumps, welding and soldering, plumbing inspection, and applicable codes and standards.

**What can I do with this certificate?**

- Career Options:** Plumber, Plumbing repairs, Swimming pool Installations, new home installations.
- Academic Options:** Pursue the Building Construction Technologies Associate of Applied Science Degree.
- Location:** Downtown Campus
- Department/Contact Information:**  
 Dean: 206-7134  
 Lead Faculty: 206-7137  
 Program/Major/Concentration Codes: **CRTPLM/PLM**

**General Education Courses - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 55.

Communication Requirement .....	†
GTW 101 fulfills this requirement	
Analysis and Critical Thinking Requirement .....	†
GTM 105 fulfills this requirement.	
<b>Subtotal</b> .....	<b>¥</b>

Course Number	Course Title	Credit Hours
---------------	--------------	--------------

**Required Courses - A grade of C or better is required for graduation.**

BCT 105**	Professionalism in Service, Construction Math, Basic Rigging .....	3
BCT 106*	Soldering and Brazing for BCT .....	4
BCT 107**	Basic Safety, Hand and Power Tools, Blueprint Reading .....	3
BCT 120*	Blueprint Reading for Construction .....	3
BCT 181*	Plumbing I .....	4
BCT 182*	Plumbing II .....	4
BCT 183*	Plumbing III .....	4
<b>Subtotal</b> .....		<b>25</b>

<b>Required Support Courses</b>		
CSA 100*	Computer Literacy .....	1
GTM 105*	Applied Technical Mathematics .....	3
GTW 101*	Writing for Trades and Technical Occupations .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>32</b>

† Required courses fulfill this requirement.

‡ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitute for BCT 107.



## Business Careers

- Business
- International Business Studies
- Logistics and Supply Chain Management

## Business

Explore the world of business including accounting, marketing, finance, economics and business administration. Acquire marketable business skills for employment in a variety of fields or prepare to start your own business.

### Basic Business — Certificate for Direct Employment

Get an introduction to business skills and principles.

#### *What can I do with this certificate?*

**Career Options:** Entry-level business operations.

**Academic Options:** Continue your studies with the Advanced Business Certificate program.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-56/52.0201-Gedt.html>

**Locations:** All campuses.

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7691

Program/Major Codes: **CRTBUSINES-B/BUB**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BUS 100	Introduction to Business .....	3
BUS 151*	Mathematics of Business .....	3
MGT 110	Human Relations in Business and Industry .....	3
<b>Total credits as displayed .....</b>		<b>9</b>
<b>Required Support Courses</b>		
ACC 100	Practical Accounting Procedures .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
or WRT 154*	Career Communications .....	
Electives - Complete 1-3 credit hours from the following list: .....		1-3
ACC, BUS, CIS, CSA, ECN, FIN, MGT, MKT		
<b>Subtotal .....</b>		<b>7-9</b>
<b>Total credits as displayed .....</b>		<b>16-18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Advanced Business — Certificate for Direct Employment

Learn fundamental principles of business and skills in accounting, management and marketing.

### What can I do with this certificate?

**Career Options:** Entry-level business and marketing functions.

**Academic Options:** Continue your studies through the Business or Business Administration programs.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-55/52.0201-Gedt.html>

**Locations:** All campuses.

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7691

Program/Major Codes: **CRTBUSINES-A/BUA**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 or 154 fulfills this requirement.	
Analysis and Critical Thinking Requirement . . . . .	0-3
BUS 151 (only if taken after Spring 2008) fulfills this requirement.	
<b>Subtotal . . . . .</b>	<b>0-3‡</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

BUS 100	Introduction to Business . . . . .	3
BUS 151*	Mathematics of Business . . . . .	3
BUS 220	Legal Environment of Business . . . . .	3
MGT 110	Human Relations in Business and Industry . . . . .	3
<b>Subtotal . . . . .</b>		<b>12</b>

### Required Support Courses

ACC 100	Practical Accounting Procedures . . . . .	3
ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201 . . . . .	3
CIS/CSA 104*	Computer Fundamentals . . . . .	3
MGT 280*	Business Organization and Management . . . . .	3
MKT 111	Principles of Marketing . . . . .	3
WRT 101*	English Composition I SUN# ENG 1101 . . . . .	3
or WRT 154*	Career Communications	
<b>Subtotal . . . . .</b>		<b>18</b>
<b>Total credits as displayed . . . . .</b>		<b>30-33</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Business — Associate of Applied Science Degree for Direct Employment

Learn basic business principles and specialize in marketing or management. Students planning to transfer to a four-year university should pursue the Associate of Business Administration.

### What can I do with this degree?

**Career Options:** Carry out basic business functions, especially in marketing or management, for an employer or to open a small business.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)).

**Locations:** Management concentration at the East and West Campuses; Marketing concentration at the West Campus.

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7691

Program/Major/Concentration Codes: **AASBUSINESS/BUS/\*\*\*\*** (see concentration codes below)

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
WRT 101 or 154 fulfills 3 credits of this requirement. Complete an appropriate course from the pairs listed in the Communication category.	
Analysis and Critical Thinking Requirement .....	3-6
BUS 151 (only if taken after Spring 2008) fulfills 3 credits in the Mathematics category. Complete a course from the Science or Critical Thinking category.	
Humanities and Social Science Requirement .....	3
ECN 201 or 202 fulfills 3 credits of the Social Science category. Complete a course from the Humanities/Fine Arts or Leadership/Ethics category.	
Computer and Information Literacy Requirement .....	†
CIS/CSA 104 fulfills this requirement.	
Special Requirements	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> .....	<b>9-12†</b>

Course Number	Course Title	Credit Hours
---------------	--------------	--------------

### Required Core Courses - A grade of C or better is required for graduation.

BUS 100	Introduction to Business .....	3
BUS 151*	Mathematics of Business .....	3
BUS 220	Legal Environment of Business .....	3
MGT 110	Human Relations in Business and Industry .....	3
<b>Subtotal</b> .....		<b>12</b>

### Required Support Courses

ACC 100	Practical Accounting Procedures .....	3
ACC 211	Financial Accounting ( <i>was ACC 101</i> ) SUN# ACC 2201 .....	3
CIS/CSA 104*	Computer Fundamentals .....	3
ECN 201*	Microeconomic Principles SUN# ECN 2202 .....	3
or ECN 202*	Macroeconomic Principles SUN# ECN 2201	
MGT 280*	Business Organization and Management .....	3
MKT 111	Principles of Marketing .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
or WRT 154*	Career Communications	
Electives: Select 6 credits hours from the following list: ACC, BUS, CIS, CSA, ECN, FIN, MGT, MKT		6
<b>Subtotal</b> .....		<b>27</b>

**Core Concentrations: - A grade of C or better is required for graduation.**

Complete one of the following concentrations: ..... 12-13  
 Select a minimum of 12-13 credit hours from one concentration: Department faculty advisor or counselor approval is recommended in the selection of the program concentration and courses within the concentration.

**Management Concentration** (Concentration Code: BUSM)

MGT 122*	Supervision .....	3
MGT 124	Small Business Management .....	3
MGT 270*	Computer Applications for Managers .....	3
MGT 276*	Human Resources .....	3
<b>Subtotal</b> .....		<b>12</b>

**Marketing Concentration** (Concentration Code: BUSK)

**Select 4 courses from the following:**

DAR 120	Applied Computer Graphics .....	4
MKT 113	Salesmanship .....	3
MKT 125	Advertising .....	3
MKT 139	Retailing .....	3
MKT 196*	Independent Study in Marketing and Business .....	3
<b>Subtotal</b> .....		<b>12-13</b>
<b>Total credits as displayed</b> .....		<b>60-64</b>

† Core or support course(s) fulfill this requirement.  
 ¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.

**Business Administration — Associate of Business Administration (ABUS) Degree for Transfer**

Jump start your career by completing this degree and then transferring to a university business administration degree or related program.

**What can I do with this degree?**

- Career Options:** This degree is designed for transfer rather than direct employment. After completing a 4-year degree, students are qualified for a variety of business careers including accounting, finance, management and marketing.
- Academic Options:** Transfer to a 4-year university to complete your bachelor's degree.
- Locations:** All campuses
- Contact Information:** Contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).
- Program/Major Codes: **AOBBUSIADMIN/BUD**

**Arizona General Education Curriculum Requirement (AGEC-B) - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences .....	8
Mathematics.....	†
MAT 212 or 220 fulfills this requirement.	
Social and Behavioral Sciences .....	3
ECN 201 fulfills 3 credits of this requirement. Complete a non-ECN course from this category.	
Other Requirements .....	†
CIS 120 and ECN 202 fulfill this requirement.	
Special Requirements	
The I, C, and G requirements should be fulfilled by selecting appropriate courses in the above categories.	
<b>Subtotal</b> .....	<b>23¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201	3
ACC 212*	Managerial Accounting (was ACC 102) SUN# ACC 2202	3
BUS 205*	Statistical Methods in Economics and Business SUN# BUS 2201	3
BUS 220	Legal Environment of Business	3
CIS 120	Computer Applications for Business SUN# CIS 1120	4
ECN 201*	Microeconomic Principles SUN# ECN 2202	3
ECN 202*	Macroeconomic Principles SUN# ECN 2201	3
MAT 151*	College Algebra SUN# MAT 1151	4
(MAT 151 may be substituted by another transferable course if the student has tested above MAT 151 or completed a College MAT course numbered higher than 151 with a grade C or better.)		
Business Math Requirement:		6-7
Please note: The UA accepts the combination of MAT 212 and BUS 277. ASU accepts the combination of MAT 220 and 231, or MAT 212 and an additional Math course at ASU. The NAU BSBA program in Flagstaff only requires MAT 172, while their BBA program through the Extended Campus requires MAT 212 and either MAT 151 or 172. Regardless of which university a student plans to transfer, any student who wants to earn a Pima ABUS degree still needs one of the three combinations listed below.		
MAT 212 and BUS 277 or MAT 172* and 212* or MAT 220* and 231*	Topics in Calculus SUN# MAT 2212 Analytical Methods in Business Finite Mathematics Topics in Calculus SUN# MAT 2212 Calculus I SUN# MAT 2220 Calculus II SUN# MAT 2230	5-8
Business Administration Electives:		5-8
See an advisor to complete the appropriate number of transferable electives so the program total is 60–64 credits. Transfer courses (check the Course Equivalency Guide online) from the following business prefixes are recommended: ACC, BUS, CIS, FIN, MGT, MKT or language courses.		
<b>Subtotal</b>		<b>37-41</b>
<b>Total credits as displayed</b>		<b>60-64</b>

† Core or support course(s) fulfill this requirement.

‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Retailing and Fashion Consumer Sciences - Associate Degree for Transfer

Jump start your retail management or fashion merchandising career by completing this degree and then transferring to a university retailing/merchandising degree or related program emphasizing various principles employed to manage the retail supply chain in order to satisfy consumers' needs.

### What can I do with this certificate?

**Career Options:** Retail management personnel examine retail, marketing, fashion, and management principles that are applied across a broad spectrum of U.S. and global retail businesses including store, catalog, internet, services firms and other businesses that support these diverse retailers.

**Academic Options:** Transfer to the University of Arizona or other school to pursue a degree in retailing/merchandising or a related degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 206-7694

Lead Faculty: 206-7206

Program/Major Codes: **AOABFT/BFT**

### Arizona General Education Curriculum Requirement (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 79.

English Composition	6
Humanities and Fine Arts	6



Biological and Physical Sciences .....	8
Mathematics..... †	
MAT 151 fulfills this requirement.	
Social and Behavioral Sciences .....	3
ECN 201 fulfills 3 credits of this requirement. Complete a non-ECN course from the Social and Behavioral Sciences list.	
Other Requirements .....	†
CIS 120 and MAT 212 fulfill this requirement.	
Special Requirements	
The I, C, and G requirements should be fulfilled by selecting appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>23¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
MKT 140	Fashion Merchandising .....	3
MKT 240*	Fashion Merchandising Planning and Control .....	4
<b>Subtotal .....</b>		<b>7</b>

<b>Required Support Courses</b>		
ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201 .....	3
ACC 212*	Managerial Accounting (was ACC 102) SUN# ACC 2202 .....	3
BUS 205*	Statistical Methods in Economics and Business .....	3
BUS 220	Legal Environment of Business .....	3
CIS 120*	Computer Applications for Business SUN# CIS 1120 .....	4
ECN 201*	Microeconomic Principles SUN# ECN 2201 .....	3
ECN 202*	Macroeconomic Principles SUN# ECON 2202 .....	3
MAT 151*	College Algebra SUN# MAT 1151 .....	4
MAT 212*	Topics in Calculus SUN# MAT 2212 .....	3
Second Language .....		8
Completion of a Language course numbered 102*, second semester level. (Bilingual students should consult an advisor or counselor concerning exceptions to this requirement. If a student satisfies the requirement in fewer than 8 credits, additional credit hours of transferable electives may be required to meet the minimum associate degree requirement of 60 credit hours.)		
<b>Subtotal .....</b>		<b>37</b>
<b>Total credits as displayed .....</b>		<b>67</b>

† Core or support course(s) fulfill this requirement.  
 ¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Retail Management — Certificate for Direct Employment

Learn the skills needed to succeed as a supervisor or manager in a retail business. This program meets the requirements of the Western Association of Food Chains (WAFC).

### What can I do with this certificate?

- Career Options:** Advance in your career as a retail manager or supervisor.
- Academic Options:** Continue your studies with other degrees and certificates in Business.
- More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-61/52.0212-Gedt.html>
- Location:** Downtown Campus
- Department/Contact Information:**  
 Dean: 206-7694  
 Lead Faculty: 206-7216  
 Program/Major Codes: **CRTBFR/BFR**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS/CSA 104	Computer Fundamentals .....	3
CMN 120	Business and Professional Communication .....	3
FIN 107	Business Finance .....	3
MGT 110	Human Relations in Business and Industry .....	3
MGT 276*	Human Resources .....	3
MGT 280	Business Organization and Management .....	3
MKT 111	Principles of Marketing .....	3
MKT 139	Retailing .....	3
<b>Subtotal</b> .....		<b>24</b>
<b>Total credits as displayed</b> .....		<b>24</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## International Business Studies

### International Business Management Certificate

Learn International business and management skills while working with students from other countries. Non-English speakers must verify English proficiency requirements with the Center for International Education and Global Engagement or online at <https://www.pima.edu/new-students/international/application-instructions.html>).

#### What can I do with this certificate?

**Career Options:** Entry-level business operations with a diverse workforce, either domestically or abroad.

**Academic Options:** Continue your studies with the Advanced Business Certificate program.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-57/52.0201-Gedt.html>

**Locations:** All campuses.

**Department/Contact Information:**

Dean: 520-206-7694

Program/Major Codes: **CRTIBM/IBM**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BUS 148	Business Ethics .....	3
BUS 210*	International Business .....	3
ECN 202*	Principles of Macroeconomics SUN# ECN 2201 .....	3
IBS 120	Cultural Environment of International Business .....	3
MGT 135	International Management .....	3
WRT 154*	Career Communications .....	3
<b>Total credits as displayed</b> .....		<b>18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Logistics and Supply Chain Management

## Basic Logistics and Supply Chain Management — Certificate for Direct Employment

Get an introduction to logistics and transportation skills and principles.

### What can I do with this certificate?

**Career Options:** Entry-level positions in logistics.

**Academic Options:** Continue your studies with the Logistics and Supply Chain Management Advanced Certificate program.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-59/52.0203-Gedt.html>

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-7694

Program/Major Codes: **CRTLGC/LGC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
LGM 101	Principles of Logistics and Supply Chain Management .....	3
LGM 102*	Inventory Control .....	3
LGM 104	Computerized Logistics .....	3
LGM 105	Warehouse Management .....	3
LGM 109	Readiness Skills for Logistics Careers .....	1
LGM 106 or LGM 108	Transportation and Traffic Management .....	3
<b>Total credits as displayed .....</b>		<b>16</b>
<b>Required Support Courses</b>		
WRT 101* or WRT 154*	English Composition I SUN# ENG 1101 .....	3
<b>Subtotal .....</b>		<b>3</b>
<b>Total credits as displayed .....</b>		<b>19</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Advanced Logistics and Supply Chain Management — Certificate for Direct Employment

Learn fundamental principles of and skills of logistics and transportation, inventory control, and warehouse management.

### What can I do with this certificate?

**Career Options:** Entry-level positions in warehouse and transportation.

**Academic Options:** Continue your studies through the Logistics and Supply Chain Management AAS degree program.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-58/52.0203-Gedt.html>

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-7694

Program/Major Codes: **CRTLGV/LGV**

**General Education Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 or 154 fulfills this requirement.	
Analysis and Critical Thinking Requirement .....	3
<b>Subtotal .....</b>	<b>3¥</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

LGM 101	Principles of Logistics and Supply Chain Management .....	3
LGM 102*	Inventory Control .....	3
LGM 104	Computerized Logistics .....	3
LGM 105	Warehouse Management .....	3
LGM 106	Transportation and Traffic Management .....	3
LGM 108	International Logistics .....	3
LGM 109	Readiness Skills for Logistics Careers .....	1
LGM 190*	Logistics and Supply Chain Internship .....	3
or LGM 196*	Independent Study in Logistics and Supply Chain Management	
<b>Subtotal .....</b>		<b>22</b>

**Required Support Courses**

MGT 122*	Supervision .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
or WRT 154*	Career Communications	
<b>Subtotal .....</b>		<b>6</b>
<b>Total credits as displayed .....</b>		<b>31</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 6 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Logistics and Supply Chain Management — Associate of Applied Science Degree for Direct Employment

Learn fundamental principles of logistics and transportation, as well as skills in inventory control, warehouse management, business, and supervision.

### What can I do with this degree?

**Career Options:** Entry-level to supervisory-level positions in inventory control, transportation, and warehouse management.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-7694

Program/Major Codes: **AASLGM/LGM**

**General Education Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
WRT 101 or 154 fulfills 3 credits of this requirement. Complete an appropriate course from the pairs listed in the Communication category.	
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	†
GEO 104 and MGT/STU 230 fulfill this requirement.	
Computer and Information Literacy Requirement .....	†
CIS/CSA 104 fulfills this requirement.	
Special Requirements	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>9¥</b>

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
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**Required Core Courses - A grade of C or better is required for graduation.**

LGM 101	Principles of Logistics and Supply Chain Management .....	3
LGM 102*	Inventory Control .....	3
LGM 103	Contracts and Freight Claims .....	3
LGM 104	Computerized Logistics .....	3
LGM 105	Warehouse Management .....	3
LGM 106	Transportation and Traffic Management .....	3
LGM 107	Introduction to Purchasing .....	3
LGM 108	International Logistics .....	3
LGM 190*	Logistics and Supply Chain Internship .....	3
or LGM 196*	Independent Study in Logistics and Supply Chain Management	
<b>Subtotal .....</b>		<b>27</b>

**Required Support Courses**

BUS 100	Introduction to Business .....	3
BUS 125	eCommerce .....	3
CIS/CSA104*	Computer Fundamentals .....	3
GEO 104	World Regional Geography .....	3
MGT 122*	Supervision .....	3
MGT/STU 230	Dynamics of Leadership .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
or WRT 154*	Career Communications	
Electives: Select 3 credits hours from the following list: .....		3
ACC 100, BUS 148, 220*, CSA 110, MGT 130, 280; MKT 100, 111		
<b>Subtotal .....</b>		<b>24</b>
<b>Total credits as displayed .....</b>		<b>60</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# Clinical Research Coordinator

## Clinical Research Coordinator — Associate of Applied Science for Direct Employment

Learn to manage clinical research trials involving human subjects in classes taught by physicians and other clinical research professionals.

**Before enrolling in this program**, you must meet certain requirements:

- Attend a Clinical Research Coordinator Program Information session.
- Submit application packet by due date
- Complete health declaration and immunization information.

**To participate in the internship course, students must:**

- Maintain health insurance and CPR card at the Health Card Provider Level prior to registering for CRC 291 (Internship course).

### What can I do with this degree?

**Career Options:** Seek an entry-level position or career advancement in hospitals, medical centers, universities, or private research group.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-2153

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 and 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement . . . . .	†
BIO 160IN or 201IH, and BIO 2021N or CHM 1301N fulfill the credit requirements for this category. Complete the Math Competency.	
Humanities and Social Science Requirement . . . . .	†
Support Course Electives fulfill this requirement	
Computer and Information Literacy Requirement . . . . .	†
CSA 100 fulfills this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the Humanities and Social Science category.	
<b>Subtotal</b> . . . . .	<b>0</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

CRC 101	Foundations of Clinical Research . . . . .	3
CRC 110*	Clinical Research Common Terminology . . . . .	3
CRC 201*	Clinical Research Regulatory Compliance . . . . .	3
CRC 230*	Introduction to Clinical Research Study Protocol . . . . .	2
CRC 240*	Pharmacology for Clinical Trials . . . . .	4
CRC 250*	Clinical Research Site Coordination and Management . . . . .	3
CRC 260IN	Lab Skills and Professional Practice . . . . .	3
CRC 270*	Research Management for Sponsors and CROs . . . . .	3
CRC 291*	Clinical Research Coordinator Internship . . . . .	3
<b>Subtotal</b> . . . . .		<b>27</b>

**Required Support Courses - A grade of C or better is required for graduation.**

BIO 160IN	Introduction to Human Anatomy and Physiology .....	4-5
or BIO 201IH**	Human Anatomy, Physiology and Histology	
BIO 202IN	Human Anatomy and Physiology II SUN# BIO 2202.....	4-5
or CHM 130IN	Fundamental Chemistry SUN# CHM 1130	
CSA 100	Computer Literacy.....	1
CSA 110	Spreadsheets: Microsoft Excel .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102.....	3
Electives****	.....	15
Complete Arizona General Education Curriculum (AGEC) courses from the following categories: Fine Arts (3 credits), Humanities (3 credits), Social & Behavioral Sciences (6 credits), Other Requirements (3 credits), (Course lists for each General Education category can be found starting on page 74.)		
<b>Subtotal</b> .....		<b>33-35</b>
<b>Total credits as displayed</b> .....		<b>60-62</b>

† Core or support course(s) fulfill this requirement.  
 ¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* BIO 201IN may be substituted for BIO 201IH.  
 \*\*\* Students intending to transfer for a Bachelor's Degree at one of the three state universities should also complete MAT 141, 142, 151 or higher and one additional course from the Other Requirements category to meet the Arizona General Education Curriculum (AGEC) requirements for transfer. The I, C, and G requirement should be fulfilled by completing appropriate courses in the above categories. NOTE: the additional general education course may not be financial aid eligible.

## Computer-Aided Design

Prepare for careers in a variety of manufacturing and construction settings. Master basic to advanced computer-aided design skills for high-demand careers.

### Computer-Aided Design — Associate of Applied Science Degree for Direct Employment

Choose from three Computer-Aided Drafting/Design concentrations.

#### What can I do with this degree?

**Career Options:** Work as a drafter modeler and entry level designer in industries such as manufacturing, electronics, building construction and site development.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major/Concentration Codes: **AASELECMECHN/CAD/\*\*\*\*** (see concentration codes below)

#### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	6
Analysis and Critical Thinking Requirement . . . . .	6
Humanities and Social Science Requirement . . . . .	6
Computer and Information Literacy Requirement . . . . .	†
CAD 101 fulfills this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> . . . . .	<b>18</b>

Course Number	Course Title	Credit Hours
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#### Required Core Courses - A grade of C or better is required for graduation.

CAD 101	Computer-Aided Drafting . . . . .	4
CAD 280*	Computer-Aided Design Portfolio . . . . .	1
<b>Subtotal</b> . . . . .		<b>5</b>

#### Core Concentrations - A grade of C or better is required for graduation.

Complete one of the following concentrations: . . . . . 37

Department faculty approval is recommended when selecting concentration and technical elective courses.

##### Mechanical/Electro-Mechanical Concentration (Concentration Code: DFTA)

CAD 117	Print Reading with CAD for Manufacturing . . . . .	4
or CAD 152*	Technical Drafting	
CAD 142	Introduction to Parametric Modeling: SolidWorks. . . . .	4
CAD 153*	Electro-Mechanical Design . . . . .	4
CAD 172*	Geometric Dimensioning and Tolerancing . . . . .	3
CAD 203*	Advanced Electro-Mechanical Design . . . . .	4
CAD 242*	Advanced Parametric Modeling: SolidWorks . . . . .	4
CAD 270*	Integrated Mechanical/Electro-Mechanical Design . . . . .	4
MAC 100	Introduction to Machine Tool . . . . .	3

Technical Electives .....	7
Complete 7 credit hours from the following list: CAD 199, 199WK, 222, 232, 242, 252, 282, ENG, MAC, TEC 100, 101, WLD 110, or MAT 151 or higher	
<b>Subtotal .....</b>	<b>37</b>
<b>Construction</b> (Concentration Code: DFTC)	
CAD 151           Computer-Aided Design for Construction .....	4
CAD 155*         Residential Computer-Aided Design .....	4
CAD 157*         Introduction to Site Development and Design .....	4
Complete 16 credit hours from the following courses: .....	16
CAD 127       Introduction to MicroStation	
CAD 166       Introduction to Revit	
CAD 206*      Commercial Design: Revit	
CAD 207*      Land Development Design: Civil 3D	
CAD 256*      Advanced Commercial Design: Revit	
CAD 257*      Advanced Land Development Design: Civil 3D	
CAD 265*      Design for Sustainability	
CAD 266*      Mechanical, Electrical, Plumbing Design: Revit MEP	
Technical Electives .....	9
Complete 9 credit hours from the following list: BCT 101, 102, 204, 265, CAD 196, 199, 199WK, 296, LTP 119, 129, 140	
<b>Subtotal .....</b>	<b>37</b>
<b>Integrated Circuit Layout Design</b> (Concentration Code: DFTI)	
CAD 104*         Integrated Circuit Layout Fundamentals .....	4
CAD 114           Electronic Manufacturing Processes .....	2
CAD 153*         Electro-Mechanical Drafting and Design .....	4
CAD 154*         Integrated Circuit Layout Design I .....	4
CAD 204*         Integrated Circuit Layout Design II .....	4
CAD 254*         Integrated Circuit Layout Design III .....	4
TEC 100           Introduction and Overview of Electronics .....	3
TEC 101*         Physics for Technology .....	3
Technical Electives .....	9
Complete 9 credit hours from the following list with the approval of the department chair or faculty advisor: CAD 196, 199, 199WK, 203, 296 or other approved CAD courses; ENG; TEC 121/121LB, 122/122LB, 123/123LB.	
<b>Subtotal .....</b>	<b>37</b>
<b>Total credits as displayed .....</b>	<b>60</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

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## CAD Technician — Certificate for Direct Employment

Learn basic drafting and design fundamentals using AutoCAD and SketchUp computer-aided drafting (CAD) tools

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### What can I do with this certificate?

**Career Options:** Work as an entry-level drafter/designer in residential architecture, small commercial architecture, small civil design, and interior design.

**Academic Options:** Continue your studies by completing the Architectural Designer Certificate and/or the Computer-Aided Drafting Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTCDT/CDT**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 101	Computer-Aided Drafting .....	4
CAD 151	Computer-Aided Design for Construction .....	4
CAD 155*	Residential Computer-Aided Design .....	4
CAD 157*	Introduction to Site Development and Design .....	4
<b>Total credits as displayed .....</b>		<b>16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Civil Engineering Technician — Certificate for Direct Employment

Learn basic drafting and design fundamentals using AutoCAD, Civil 3D, and MicroStation computer-aided design (CAD) tools

### What can I do with this certificate?

**Career Options:** Work as an entry-level technician in land development and transportation civil engineering firms.

**Academic Options:** Continue your studies by completing the Computer-Aided Drafting Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTCIV/CIV**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 101	Computer-Aided Drafting .....	4
CAD 127	Introduction to MicroStation .....	4
CAD 157*	Introduction to Site Development and Design .....	4
CAD 207*	Land Development Design: Civil 3D .....	4
<b>Total credits as displayed .....</b>		<b>16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Revit Technician — Certificate for Direct Employment

Learn modeling and design fundamentals using Revit computer-aided design (CAD) tools

### What can I do with this certificate?

**Career Options:** Work as an entry-level technician in architectural, mechanical/HVAC, electrical-engineering, plumbing, and construction firms.

**Academic Options:** Continue your studies by completing the Architectural Designer Certificate and/or the Computer-Aided Design Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTREV/REV**



Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 166	Introduction to Revit .....	4
CAD 206*	Commercial Design: Revit .....	4
CAD 256*	Advanced Commercial Design: Revit .....	4
CAD 266*	Mechanical, Electrical, Plumbing Design: Revit MEP .....	4
<b>Total credits as displayed .....</b>		<b>16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## SolidWorks Designer — Certificate for Direct Employment

Learn basic design and modeling fundamentals using SolidWorks computer-aided design (CAD) tools

### What can I do with this certificate?

**Career Options:** Work as an entry-level drafter/designer in mechanical engineering and manufacturing industries.

**Academic Options:** Continue your studies by completing the Mechanical Designer/CNC Programmer Certificate or the Mechanical/Electro-Mechanical Designer Certificate and/or the Computer-Aided Design Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTSWD/SWD**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 117 or CAD 152*	Print Reading with CAD for Manufacturing .....	4
	Technical Drafting .....	
CAD 142	Introduction to Parametric Modeling: SolidWorks.....	4
CAD 172*	Geometric Dimensioning and Tolerancing .....	3
CAD 242*	Advanced Parametric Modeling: SolidWorks .....	4
CAD 270*	Integrated Mechanical/Electro Mechanical Design.....	4
<b>Total credits as displayed .....</b>		<b>19</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Integrated Circuit Layout Design – Certificate for Direct Employment

Graduates of the Integrated Circuit Layout Design program are employed by firms who design and manufacture the subminiature electronic circuits that are at the nucleus of all electronic and computerized equipment. Integrated circuit designers use computer-aided design systems to design the templates or masks that are used to manufacture microelectronic circuits. Graduates of this program may also be employed as electronic circuit board designers and layout specialists.

Learn basic drafting and design fundamentals using Computer-Aided Drafting (CAD) tools.

### What can I do with this certificate?

**Career Options:** Work as an entry-level integrated circuit layout designer in manufacturing industries.

**Academic Options:** Continue your studies by completing Computer-Aided Drafting AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-18/15.1305-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 206-7252

Program/Major Codes: **CRTICD/ICD**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 104*	Integrated Circuit Layout Fundamentals .....	4
CAD 114	Electronic Manufacturing Processes .....	2
CAD 154*	Integrated Circuit Layout Design I .....	4
CAD 204*	Integrated Circuit Layout Design II .....	4
CAD 254*	Integrated Circuit Layout Design III .....	4
<b>Subtotal</b> .....		<b>18</b>
<b>Required Support Course</b>		
TEC 100	Introduction to Electronics Technology .....	3
<b>Subtotal</b> .....		<b>3</b>
<b>Total credits as displayed</b> .....		<b>21</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Architectural Technician — Certificate for Direct Employment

Gain advanced computer-aided design (CAD) Learn advanced design, drafting, and modeling fundamentals using AutoCAD, SketchUp, and Revit computer-aided design (CAD) tools.

### What can I do with this certificate?

**Career Options:** Work as an entry-level technician in residential architecture, commercial architecture, and construction firms.

**Academic Options:** Continue your studies by completing the Computer-Aided Design Associate of Applied Science Degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-16/15.1302-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTACH/ACH**

<b>General Education Requirements - A grade of C or better is required for graduation.</b>		
<i>Course lists for each General Education category listed below can be found starting on page 74.</i>		
Communication Requirement .....		3
Analysis and Critical Thinking Requirement .....		†
GTM 105 fulfills this requirement.		
<b>Subtotal</b> .....		<b>3</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 101	Computer-Aided Drafting .....	4
CAD 151	Computer-Aided Design for Construction .....	4
CAD 155*	Residential Computer-Aided Design .....	4
CAD 157*	Introduction to Site Development and Design .....	4

CAD 166	Introduction to Revit .....	4
CAD 206*	Commercial Design: Revit .....	4
CAD 256*	Advanced Commercial Design: Revit .....	4
CAD 266*	Mechanical, Electrical, Plumbing, Drafting & Design: Revit MEP .....	4
CAD 280*	Computer-Aided Design Portfolio .....	1
GTM 105*	Applied Technical Mathematics .....	3
<b>Subtotal</b> .....		<b>36</b>
<b>Total credits as displayed</b> .....		<b>39</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Mechanical Designer/CNC Programmer — Certificate for Direct Employment

Learn mechanical design and modeling fundamentals using SolidWorks computer-aided design (CAD) and programmer skills in computer numerical control (CNC).

### What can I do with this certificate?

**Career Options:** Work as an entry-level modeler/designer in manufacturing and/or employment in CNC programming.

**Academic Options:** Continue your studies by completing the Computer-Aided Drafting Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTMDC/MDC**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	†
GTM 105 fulfills this requirement.	
<b>Subtotal</b> .....	<b>3</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

CAD 117 or CAD 152*	Print Reading with CAD for Manufacturing .....	4
	Technical Drafting .....	
CAD 142	Introduction to Parametric Modeling: SolidWorks .....	4
CAD 172*	Geometric Dimensioning and Tolerancing .....	3
CAD 242*	Advanced Parametric Modeling: SolidWorks .....	4
CAD 270*	Integrated Mechanical/Electro-Mechanical Design .....	4
CAD 280*	Computer-Aided Design Portfolio .....	1
GTM 105*	Applied Technical Mathematics .....	3
MAC 100	Introduction to Machine Tool .....	3
MAC 150*	Computer Numerical Control (CNC) Mill Programming I .....	4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II .....	4
MAC 257*	Computer Aided Machining (CAM) I .....	4
<b>Subtotal</b> .....		<b>38</b>
<b>Total credits as displayed</b> .....		<b>41</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Mechanical/Electro-Mechanical Designer — Certificate for Direct Employment

Learn mechanical and electro-mechanical design and modeling fundamentals using AutoCAD and SolidWorks computer-aided design (CAD).

### What can I do with this certificate?

**Career Options:** Work as an entry-level modeler/designer in mechanical and electro-mechanical engineering and manufacturing.

**Academic Options:** Continue your studies by completing the Computer-Aided Design Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTMEM/MEM**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	†
MAT 151 fulfills this requirement.	
<b>Subtotal .....</b>	<b>3</b>

Course Number	Course Title	Credit Hours
---------------	--------------	--------------

### Required Core Courses - A grade of C or better is required for graduation.

CAD 101	Computer-Aided Drafting .....	4
CAD 117	Print Reading with CAD for Manufacturing .....	4
or CAD 152*	Technical Drafting	
CAD 142	Introduction to Parametric Modeling: SolidWorks .....	4
CAD 153*	Electro-Mechanical Design .....	4
CAD 172*	Geometric Dimensioning and Tolerancing .....	3
CAD 203*	Advanced Electro-Mechanical Design .....	4
CAD 242*	Advanced Parametric Modeling: SolidWorks .....	4
CAD 270*	Integrated Mechanical/Electro-Mechanical Design .....	4
CAD 280*	Computer-Aided Design Portfolio .....	1
MAT 151*	College Algebra SUN# MAT1151 .....	4
<b>Subtotal .....</b>		<b>36</b>
<b>Total credits as displayed .....</b>		<b>39</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Basic Computer Aided Design — Certificate for Direct Employment

Learn basic drafting and design fundamentals using computer-aided drafting (CAD) tools.

### What can I do with this certificate?

**Career Options:** Work as an entry-level drafter/designer in manufacturing and construction industries.

**Academic Options:** Continue your studies by completing the advanced Computer-Aided Drafting/design certificate.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-17/15.1303-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 206-7252

Program/Major Codes: **CRTCNDRFT-B/CAB**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 101	Computer-Aided Drafting .....	4
<b>Subtotal</b>		<b>4</b>
<b>Required Support Courses</b>		
CAD: Complete 12 credit hours of CAD courses numbered 120 or higher with the approval of the department chair or faculty advisor. ....		12
<b>Subtotal</b>		<b>12</b>
<b>Total credits as displayed</b>		<b>16</b>

## Advanced Computer Aided Design — Certificate for Direct Employment

Gain advanced computer-aided design (CAD) skills.

### *What can I do with this certificate?*

**Career Options:** Apply for advanced drafting/design positions.

**Academic Options:** Pursue an associate degree in Computer-Aided Drafting/design.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-16/15.1302-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTCNDRFT-A/CAA**

### **General Education Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 75.

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	3
<b>Subtotal</b> .....	<b>6</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 101	Computer-Aided Drafting .....	4
<b>Subtotal</b>		<b>4</b>
<b>Required Support Courses</b>		
CAD Complete 12 credit hours of CAD courses numbered 120 or higher with the approval of the department chair of faculty advisor. ....		12
Technical Electives .....		8
Complete 8 credit hours at the 100 level or higher from the following list with the approval of the department chair or faculty advisor: BCT, CAD, ENG, LTP, MAC, SLR, TEC or WLD.		
<b>Subtotal</b>		<b>20</b>
<b>Total credits as displayed</b>		<b>30</b>



# Computer Information Systems

Prepare for a career as a programmer, network administrator, systems administrator or database administrator, or upgrade existing skills and improve job performance.

## Computer Programmer/Analyst — Associate of Applied Science Degree for Direct Employment

Learn to design and develop software programs and applications. Courses focus on problem solving and structured programming concepts.

### What can I do with this degree?

**Career Options:** Become a programmer or programmer/analyst.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Locations:** East Campus, West Campus

**Department/Contact Information:**

Dean: 206-7694 (East Campus);

Program/Major Codes: **AASCMPPRGANL/CSP**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 and WRT 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement . . . . .	†
MAT 172 and the lab science course fulfill this requirement.	
Humanities and Social Science Requirement . . . . .	3
ECN 201 fulfills 3 credits of the Social Science category. Complete a course from the Leadership/Ethics or Humanities/Fine Arts category that also meets the cultural diversity (C) or the global awareness (G) requirement.	
Computer and Information Literacy Requirement . . . . .	†
Core courses fulfill this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal . . . . .</b>	<b>3†</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

CIS 129*	Programming and Problem Solving I . . . . .	5
CIS 131*	Programming and Problem Solving II . . . . .	5
CIS 162	Database Design and Development . . . . .	3
CIS 182*	Introduction to ANSISQL . . . . .	3
CIS 250*	Introduction to Assembly Language . . . . .	3
CIS 265*	The C Programming Language . . . . .	4
CIS 280*	Systems Analysis and Design: Concepts and Tools . . . . .	4
CIS 281*	Systems Analysis and Design: Applications . . . . .	3

Complete one of the specialization sequences: . . . . . 8-10

### .NET

CIS 141*	Introduction to VB.NET . . . . .	4
CIS 241	Advanced Visual Basic.Net Programming . . . . .	4

<b>C++/Java</b>		
CIS 269*	Data Structures .....	5
CIS 278* or CIS 279*	C++ and Object Oriented Programming .....	4-5
	Java Programming .....	

<b>Python</b>		
CIS 185*	Introduction to Python .....	4
CIS 283*	Advanced Python .....	4
<b>Subtotal</b> .....		<b>38-40</b>

#### Required Support Courses

ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201 .....	3
ECN 201*	Microeconomic Principles SUN# ECN 2202 .....	3
MAT 151** Or MAT 188**	College Algebra .....	0-4
	Precalculus I .....	
MAT 172*#	Finite Mathematics .....	3
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102 .....	3
	Laboratory Science: Select one course from the AGECE Biological and Physical Sciences category List .....	4
<b>Subtotal</b> .....		<b>19-23</b>
<b>Total credits as displayed</b> .....		<b>60-66</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Students who place into MAT 172 on the Math Placement test are not required to complete MAT 151 or 188.

# Students who plan to transfer to a university should complete MAT 227, Discrete Mathematics in Computer Science, Mat 189 or higher can substitute for MAT 172.

## Systems Administration/Networking — Certificate for Direct Employment

Pursue a systems administration or networking career. Concentrate on a specific type of system or follow the administrator concentration for a well-rounded exposure to network administration.

### What can I do with this certificate?

**Career Options:** Become a CISCO, Linux, Microsoft or general network administrator.

**Academic Options:** Continue your studies by taking courses toward a System Administration/Networking or Associate of Science degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-04/11.1001-Gedt.html>

**Locations:** East Campus, West Campus

**Department/Contact Information:**

Dean: 206-7694 (East Campus); 206-6996 (West Campus)

Program/Major/Concentration Codes: **CRTNETWRKADM/CSD/\*\*\*\*** (see concentration codes below)

Course Number	Course Title	Credit Hours
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#### Required Core Courses - A grade of C or better is required for graduation.

Complete one of the following concentrations: ..... 17-21  
Department chair or faculty advisor approval is recommended in the selection of the program concentration.

#### Systems Administration/Networking – CISCO (Concentration Code: CSNC)

CIS 170*	CISCO I: Networking Fundamentals .....	5
CIS 171*	CISCO II: Networking Router Technologies .....	5
CIS 172*	CISCO III: Advanced Routing and Switching .....	5
CIS 173*	CISCO IV: Project Based Learning .....	5
<b>Subtotal</b> .....		<b>20</b>

**Systems Administration/Networking – Linux** (Concentration Code: CSNX)

CIS 136	Microcomputer Components	3-4
or TEC 130/130LB*	Computer Assembly and Testing	
CIS 119*	Network Essentials	3-5
or CIS 170*	CISCO I: Networking Fundamentals	
CIS 137*	Introduction to the UNIX Operating System	3
CIS 225*	Linux (UNIX) System and Network Administration	4
CIS 226*	Advanced Linux Networking	4
<b>Subtotal</b>		<b>17-20</b>

**Systems Administration/Networking – Microsoft** (Concentration Code: CSNM)

CIS 103	Microsoft Windows Operating System Professional Administration	4
CIS 119*	Network Essentials	3-5
or CIS 170*	CISCO I: Networking Fundamentals	
CIS 221*	Microsoft Windows Server	4
CIS 222*	Implementing Windows Network Infrastructure	4
CIS 223*	Implementing Windows Directory Services	4
<b>Subtotal</b>		<b>19-21</b>
<b>Total credits as displayed</b>		<b>17-21</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Systems Administration/Networking — Associate of Applied Science Degree for Direct Employment

Learn to install and administer small computer systems; or study networking technologies such as CISCO, Microsoft and Novell. Courses also prepare students for industry-standard certification exams.

### What can I do with this degree?

**Career Options:** Administer microcomputer systems, administer CISCO, Microsoft or Novell systems.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Locations:** East Campus, West Campus

**Department/Contact Information:**

Dean:

206-7694 (East Campus),

Program/Major/Concentration Codes: **AASCOMPYSAD/CSN/\*\*\*\*** See concentration codes below)

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement	6
Analysis and Critical Thinking Requirement	6
Humanities and Social Science Requirement	6
Computer and Information Literacy Requirement	†
Core courses fulfill this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b>	<b>18¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS 103	Microsoft Windows Operating System Professional Administration .....	4
CIS 119*	Network Essentials .....	3-5
or CIS 170*	CISCO I: Networking Fundamentals .....	
CIS 133	Fundamentals of Personal Computer Security .....	3
CIS 136	Microcomputer Components .....	3-4
or TEC 130/130LB	Computer Assembly and Testing .....	
CIS 137*	Introduction to the UNIX Operating System .....	3
CIS 219*	Introduction to Virtual Computing .....	4
CIS 221*	Microsoft Windows Server .....	4
CIS 225*	Linux (UNIX) System and Network Administration .....	4
<b>Subtotal</b> .....		<b>28-31</b>

Course Number	Course Title	Credit Hours
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete one of the following concentrations: .....		20-23
Department chair or faculty advisor approval is recommended in the selection of the program concentration.		
<b>Cyber Security Concentration</b> (Concentration Code: CSNY)		
Choose any five courses:		
CIS 132*	Introduction to Computer Forensics .....	4
CIS 171*	CISCO II Networking Router Technologies .....	5
CIS 216*	Introduction to Wireshark and Network Analysis .....	4
CIS 223*	Implementing Windows Directory Services .....	4
or CIS 235*	Advanced Topics in Linux/Unix Security .....	
CIS 228*	Fundamentals of Network Security .....	4
CIS 229*	Protecting Your PC and Network: Countermeasures to Network Intrusion .....	4
<b>Subtotal</b> .....		<b>20-21</b>

**Administrator** (Concentration Code: CSNA)

Choose any five courses.

CIS 171*	CISCO II: Networking Router Technologies .....	5
CIS 172*	CISCO III: Advanced Routing and Switching .....	5
CIS 173*	CISCO IV: Project Based Learning .....	5
CIS 216*	Introduction to Wireshark and Network Analysis .....	4
CIS 218*	Introduction to Voice over IP (VoIP) .....	4
CIS 222*	Implementing Windows Network Infrastructure .....	4
CIS 223*	Implementing Windows Directory Services .....	4
CIS 226*	Advanced Linux Networking .....	4
CIS 228*	Fundamentals of Network Security .....	4
CIS 235*	Advanced Topics in Linux/Unix Security .....	4
<b>Subtotal</b> .....		<b>20-23</b>
<b>Total credits as displayed</b> .....		<b>66-72</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 18 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Computer Information Systems Future Enrollment Programs

These programs have been submitted to the U.S. Department of Education for approval for Title IV Federal Financial Aid. At the time this catalog was submitted for publication, they had not yet been approved.

Students are not currently being admitted to these programs.

Please check the online program displays for changes to the enrollment and financial aid status.

### CISCO Systems Network Analyst/Administration — Certificate for Direct Employment

Pursue a systems analyst, administration or networking career.

#### *What can I do with this certificate?*

**Career Options:** Become a CISCO network analyst or administrator.

**Academic Options:** Continue your studies by taking courses toward a System Administration/Networking or Associate of Science degree.

**Locations:** West Campus

**Department/Contact Information:**

Dean: 206-7694

Program/Major/Concentration Codes: **CRTSCO/SCO**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS 170*	CISCO I: Networking Fundamentals .....	5
CIS 171*	CISCO II: Networking Router Technologies .....	5
CIS 172*	CISCO III: Advanced Routing and Switching .....	5
CIS 173*	CISCO IV: Project Based Learning .....	5
<b>Total credits as displayed .....</b>		<b>20</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

### Linux Server Administration — Certificate for Direct Employment

Pursue a systems analyst, administration or networking career.

#### *What can I do with this certificate?*

**Career Options:** Become a Linux server administrator.

**Academic Options:** Continue your studies by taking courses toward an associate's degree in System Administration/Networking.

**Locations:** West Campus

**Department/Contact Information:**

Dean: 206-7694

Program/Major/Concentration Codes: **CRTLNX/LNX**



Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS 136	Microcomputer Components .....	3
CIS 119*	Network Essentials .....	3-5
or CIS 170*	CISCO I: Networking Fundamentals	
CIS 137*	Introduction to the UNIX Operating System .....	3
CIS 216*	Introduction to Wireshark and Network Analysis .....	4
CIS 219*	Introduction to Virtual Computing .....	4
CIS 225*	Linux (UNIX) System and Network Administration .....	4
CIS 226*	Advanced Linux Networking .....	4
<b>Total credits as displayed .....</b>		<b>25-27</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Microsoft Server Administration — Certificate for Direct Employment

Pursue a server administration career.

### What can I do with this certificate?

**Career Options:** Become a Microsoft server administrator.

**Academic Options:** Continue your studies by taking courses toward an associate's degree in System Administration/Networking.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-04/11.1001-Gedt.html>

**Locations:** West Campus

**Department/Contact Information:**

Dean: 206-7694

Program/Major/Concentration Codes: **CRTMSA/MSA**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS 103	Microsoft Windows Operating System Professional Administration .....	4
CIS 119*	Network Essentials .....	3-5
or CIS 170*	CISCO I: Networking Fundamentals	
CIS 216*	Introduction to Wireshark and Network Analysis .....	4
CIS 221*	Microsoft Windows Server .....	4
CIS 222*	Implementing Windows Network Infrastructure .....	4
CIS 223*	Implementing Windows Directory Services .....	4
<b>Total credits as displayed .....</b>		<b>23-25</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Culinary Arts

Set your culinary career in motion and prepare to work in hotels, restaurants and resorts.

## Culinary Arts — Certificate for Direct Employment

Courses focus on cold foods, hot foods, baking, nutrition, safety and sanitation, and general restaurant operations.

**Before enrolling in this program**, you must interview with a Culinary Arts faculty member or the Program Coordinator.

### What can I do with this certificate?

**Career Options:** Gain entry-level employment as a cook, menu planner, dining room manager or other culinary positions.

**Academic Options:** Continue your studies by completing the Associate of Applied Science degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-08/12.0504-Gedt.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-5164

Program Coordinator: 520-206-5302

**Special Admissions Program:** You are not fully admitted to this program until you have completed an interview and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CUL 101*	Principles of Restaurant Operations	3
CUL 105*	Food Service Nutrition and Sanitation	3
CUL 130*	Hot Foods I	3
CUL 140*	Culinary Principles	3
CUL 150*	Garde Manger	3
CUL 160*	Bakery and Pastry Production I	3
CUL 163*	Sauces	3
CUL 170*	Dining Room Operations	2
CUL 174*	From Garden to Table	3
CUL 180*	Food in History	3
<b>Total credits as displayed</b>		<b>29</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Culinary Arts — Associate of Applied Science Degree for Direct Employment

Courses focus on culinary management, budgeting, and hands-on food preparation.

**Before enrolling in this program**, you must interview with a Culinary Arts faculty member or the Program Coordinator.

### What can I do with this degree?

**Career Options:** Become a cook, menu planner, caterer, dining room manager or work in other culinary positions.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-5164

Program Coordinator: 520-206-5302

**Special Admissions Program:** You are not fully admitted to this program until you have completed an interview and have been officially admitted to the program. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	6
Analysis and Critical Thinking Requirement . . . . .	6
Humanities and Social Science Requirement . . . . .	6
Computer and Information Literacy Requirement . . . . .	†
CSA 100 fulfills this requirement	
<b>Subtotal . . . . .</b>	<b>18</b>

Course Number	Course Title	Credit Hours
---------------	--------------	--------------

### Required Core Courses - A grade of C or better is required for graduation.

CUL 101*	Principles of Restaurant Operations . . . . .	3
CUL 105	Food Service Nutrition and Sanitation . . . . .	3
CUL 130*	Hot Foods I . . . . .	3
CUL 140*	Culinary Principles . . . . .	3
CUL 150*	Garde Manger . . . . .	3
CUL 160*	Bakery and Pastry Production I . . . . .	3
CUL 163*	Sauces . . . . .	3
CUL 170*	Dining Room Operations . . . . .	2
CUL 174*	From Garden to Table . . . . .	3
CUL 180*	Food in History . . . . .	3
CUL 251*	International Cuisine: World of Flavor . . . . .	3
CUL 256*	Special Diets . . . . .	3
<b>Subtotal . . . . .</b>		<b>35</b>

<b>Required Support Courses - A grade of C or better is required for graduation.</b>		
CSA	100	Computer Literacy**..... 1
Electives		Complete 8-10 credits from the following list depending on individual area of interest ..... 8-10
CUL	153*	Cakes
CUL	156*	Pies
CUL	162*	The Art of Chocolate
CUL	168*	Specialty and Hearth Breads
CUL	185*	Catering Operations
CUL	199	Co-op: Culinary Arts
CUL	230*	Hot Foods II
CUL	260*	Bakery and Pastry Production II
ACC	100	Practical Accounting Procedures
BUS	100	Introduction to Business
BUS	148++	Ethics in the Workplace
BUS	151*++	Mathematics of Business
FSN	127IN++	Human Nutrition and Biology
FSN	154	Nutrition
HRM	110	Food Service Systems Management
HRM	111*	Commercial Food
HRM	140*	Introduction to Bar and Beverage Management
MKT	111	Principles of Marketing
MGT	110	Human Relations in Business and Industry
<b>Subtotal</b> .....		<b>9-11</b>
<b>Total credits as displayed</b> .....		<b>62-64</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* CSA/CIS 104 may be substituted for CSA 100.

† Core or support courses fulfill this requirement.

++ This course fulfills one of the General Education requirements. If you complete this course you may need additional credits to meet the minimum associate's degree requirement of 60 credit hours.

## Dental Studies

Complete programs to work in direct patient care as a dental hygienist or assistant, or prepare for a career in a dental laboratory.

- Dental Assisting Education
- Dental Hygiene
- Dental Laboratory Technologies

## Dental Assisting Education

### Dental Assisting Education — Certificate for Direct Employment

Learn to assist dentists and other dental professionals in patient care. Complete at least 336 hours of clinical work in dental clinics or offices. This program is accredited by the American Dental Association Commission on Dental Accreditation.

**Before enrolling in this program**, you must meet certain requirements:

This certificate requires a special program application. Students may request a program application available at: [www.pima.edu/programs-courses/credit-programs-degrees/health-professions/dental/dental-assisting/admission.html](http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/dental/dental-assisting/admission.html)

**Because of the clinical component of this program, students must:**

- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will need to stand for several hours at a time and perform bending activities. The clinical experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients' lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to submitting an application.
- Present proof of immunization and/or immunity for MMR/Varicella/Hepatitis-B/TDaP/Influenza.
- Proof of negative TB skin test or negative chest x-ray for TB within the last two years.
- Maintain health insurance and a current CPR card at the Health Care Provider Level throughout the program.
- Completed health declaration form from a licensed care provider.
- Arizona DPS Fingerprint Clearance Card, additional background screening and drug screening may be required.

#### *What can I do with this certificate?*

**Career Options:** Take the exams to gain National Dental Assisting Certification, Arizona Oral Radiology Certification and Coronal Polishing Certification. Work as a dental assistant in hospitals, clinics and dental offices.

**Academic Options:** Continue your studies by taking courses toward the Dental Hygienist AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-42/51.0601-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-6916

**Selective Admissions Program:** Students may apply and be admitted to the program, but must fulfill the requirements listed below to start the program. See the website or an advisor for details.

#### Preparatory Coursework

Students must have completed the following requirements before starting the program:

REA 112HP* or REA 112* or Accuplacer Reading assessment score of 92 or higher .....	0-4
High school or college biology course .....	0-4
High school diploma or G.E.D. ....	
<b>Subtotal</b> .....	<b>0-8</b>



Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
DAE 159*	Introduction to Health Care for Dental Assisting .....	2
DAE 160*	Orientation to Dental Care .....	1
DAE 161*	Biomedical Dental Science .....	3
DAE 162/162LB*	Dental Assisting I .....	3
DAE 163/163LC*	Oral Radiography .....	3
DAE 164/164LB*	Dental Materials .....	3
DAE 165/165LC*	Dental Assisting Procedures I/Dental Assisting Procedures Clinical I .....	2
DAE 166*	Dental Assisting II .....	3
DAE 167*	Dental Assisting III .....	3
DAE 169/169LC*	Dental Assisting Procedures II/Dental Assisting Procedures Clinical II .....	6.5
<b>Total credits as displayed (not including preparatory coursework) .....</b>		<b>29.5</b>
<b>Total credits as displayed (including preparatory coursework) .....</b>		<b>29.5-37.5</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Dental Hygiene

### Dental Hygiene — Associate of Applied Science Degree for Direct Employment

Learn dental hygiene and dental health education. This program is accredited by the American Dental Association Commission on Dental Accreditation.

**Before enrolling in this program**, you must meet certain requirements:

This degree requires a special program application. Once all prerequisites are complete students can access the program application on the MyPima Academics tab in the Degrees and Programs section. Additional application information is available at <http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/dental/dental-hygiene/index.html>.

**Once students are accepted into the Dental Hygiene program, admitted students will be expected to meet the criteria below prior to their enrollment in the Dental Hygiene courses. To participate in dental hygiene coursework, accepted students must:**

- Obtain an Arizona DPS Fingerprint Clearance Card.
- Pass a urine toxicology screening exam.
- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. The dental experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients' lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to submitting an application and be advised that they may be exposed to blood borne pathogens and infectious diseases during delivery of care.
- Present proof of immunization or immunity for MMR/Varicella/Hep-B, Hep-A, TB and TDap.
- Show proof of negative TB skin test or negative chest x-ray for TB.
- Maintain health insurance.
- Health related professions students are advised that state/national license exams or certification applications may include a personal history section in which prospective applicants must report and may have to provide a detailed explanation of legal situations. Examples of situations which may prohibit licensure or certification include, but are not limited to: felony or misdemeanor convictions, substance abuse, conviction of an offense involving immoral behavior, or being guilty of acts which deceive, defraud or cause harm to the public in any way.
- Fingerprinting may be part of many state and federal licensing and certification processes. If there is any question about eligibility for licensure or certification, it is the responsibility of the applicant to contact the state and/or federal agency responsible for licensure or certification.

Students who opt to leave the dental hygiene program may re-enter one time without need to repeat mandatory course work, if they re-enter within one (1) year, based on space availability.

#### *What can I do with this degree?*

**Career Options:** Take national and regional exams in preparation for state licensure, then work in general or specialty dental offices, hospitals, schools, public health or government agencies.

**Academic Options:** Continue your studies at Northern Arizona University for a Bachelor of Science in Dental Hygiene or other online baccalaureate opportunities.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-6622

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

### Preparatory Coursework

Student must have completed the following basic requirements before they may begin the application process.

REA 112HP** or Accuplacer Reading score of 108 or higher . . . . .	0-4
CHM 130IN*, CHM 140IN*, BIO 201IH* or BIO 201IN*, and BIO 202IN*, with a combined average grade of B or better within the last six years. . . . .	18-19
Complete the BIO 156IN* prerequisite if needed. . . . .	0-4
<b>Subtotal . . . . .</b>	<b>18-27</b>

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 and CMN 120 fulfill this requirement	
Analysis and Critical Thinking Requirement . . . . .	†
BIO 205IN and MAT 142 fulfill this requirement	
Humanities and Social Science Requirement . . . . .	3
SOC 101 fulfills 3 credits in this category. Complete a course from the Humanities/Fine Arts or Leadership/Ethics category.	
Computer and Information Literacy Requirement . . . . .	†
CSA 100 fulfills this requirement	
Special Requirement	
SOC 101 fulfills this requirement . . . . .	†
<b>Subtotal . . . . .</b>	<b>3‡</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

DHE 101/101LC*	Dental Hygiene I/Dental Hygiene I Clinical . . . . .	5
DHE 104/104LB*	Dental and Oral Morphology/Dental and Oral Morphology Lab . . . . .	2
DHE 107*	Oral Embryology and Histology . . . . .	2
DHE 112*	Preventive Dentistry . . . . .	3
DHE 116/116LC*	Oral Radiography/Oral Radiography Clinical . . . . .	3
DHE 119*	Periodontology . . . . .	2
DHE 120*	Oral Pathology . . . . .	2
DHE 122*	Pharmacology . . . . .	2
DHE 132/132LB*	Dental Materials/Dental Materials Lab . . . . .	3
DHE 150/150LB/ 150LC*	Dental Hygiene II/Dental Hygiene II Lab/Dental Hygiene II Clinical . . . . .	5.5
DHE 208/208LC*	Pain and Anxiety Control for Dental Hygiene/Pain and Anxiety Control for Dental Hygiene Clinical . . . . .	2
DHE 209*	Ethics and Practice Management . . . . .	1
DHE 212*	Nutrition and Oral Health . . . . .	1
DHE 213/213CA/ 213CB*	Advanced Periodontal Services/Advanced Periodontal Services Clinical-A/ Advanced Periodontal Services Clinical-B . . . . .	4
DHE 216*	Community and Dental Health Education . . . . .	3
DHE 250/250LC*	Dental Hygiene III/Dental Hygiene III Clinical . . . . .	7
DHE 255/255LC*	Dental Hygiene IV/Dental Hygiene IV Clinical . . . . .	4
<b>Subtotal . . . . .</b>		<b>51.5</b>

**Required Support Courses**

BIO 205IN	Microbiology SUN# BIO 2205	4
CMN 120	Business and Professional Communication	3
CSA 100***	Computer Literacy	1
MAT 142*Δ	Topics in college Mathematics SUN# MAT 1142	3
PSY 101	Introduction to Psychology SUN# PSY 1101	4
SOC 101	Introduction to Sociology SUN# SOC 1101	3
WRT 101*	English Composition I SUN# ENG 1101	3
<b>Subtotal</b>		<b>21</b>
<b>Total credits (not including preparatory coursework)</b>		<b>75.5</b>
<b>Total credits (including preparatory coursework)</b>		<b>93.5-102.5</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* REA 112 will also be accepted.

\*\*\* CIS/CSA 104 can be used to substitute for this requirements.

Δ MAT 141, 142, or 151 or higher will also fulfill this requirement. The requirement may also be waived for students who place into MAT 189 or higher.

## Dental Laboratory Technologies

### Dental Laboratory Technology — Associate of Applied Science Degree for Direct Employment

Learn the skills to construct and repair dentures, partial dentures, crowns, bridges and other dental appliances. Get 1,492 clock hours of laboratory practice. This program is accredited by the American Dental Association Commission on Dental Accreditation.

**Before enrolling in this program**, please complete a program application (available at:

[www.pima.edu/programs-courses/credit-programs-degrees/health-professions/dental/dental-laboratory-admission.html](http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/dental/dental-laboratory-admission.html))

#### What can I do with this degree?

**Career Options:** Work in a dental lab.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)).

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-3100

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above. See the website or an advisor for details.

#### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement	6
Analysis and Critical Thinking Requirement	†
CHM 130IN and the MAT support course fulfill this requirement.	
Humanities and Social Science Requirement	6
Computer and Information Literacy Requirement	†
CSA 100 fulfills this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b>	<b>12¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
DLT 101/101LB*	Dental Morphology .....	3
DLT 102*	Non-Metallic Dental Materials .....	3
DLT 103/103LB*	Complete Dentures .....	4
DLT 104/104LB*	Dental Occlusion .....	4
DLT 105/105LB*	Partial Denture Construction .....	4
DLT 106/106LB*	Orthodontic Appliances .....	3
DLT 108*	Laboratory Management .....	3
DLT 201/201LB*	Dental Laboratory I .....	3
DLT 202*	Dental Metallurgy .....	3
DLT 203/203LB*	Fixed Bridgework .....	4
DLT 204/204LB*	Dental Laboratory II .....	3
DLT 206/206LB*	Dental Ceramics .....	4
DLT 207/207LB*	Advanced Dental Laboratory Technology .....	5
<b>Subtotal</b> .....		<b>46</b>
<b>Required Support Courses</b>		
CHM 130IN*	Fundamental Chemistry SUN# CHM 1130 .....	5
CSA 100	Computer Literacy .....	1
MAT 106*, 108*, 141*, 142*, 151* or higher	.....	2-4
MGT 124	Small Business Management .....	3
<b>Subtotal</b> .....		<b>11-13</b>
<b>Total credits as displayed</b> .....		<b>69-71</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* CIS/CSA 104, CIS 100, or 120 can be used to meet program requirements.

# Digital Arts Studies

Whether your medium is print or film, television or the web, sharpen your skills and enhance your career prospects with these hands-on programs. Students wishing to prepare to transfer to a 4-year university program in audio, film and/or video should follow the Associate of Arts degree.

## Digital Arts

### Digital Arts — Associate of Applied Science Degree for Direct Employment

Prepare for a career in design, illustration, multimedia, web design or printing technology.

#### What can I do with this degree?

**Career Options:** Become a print designer, web designer, illustrator, multimedia artist, or press operator.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6840

Program/Major/Concentration Codes: **AASCOMMGRAPH/DAR/\*\*\*\*** (see concentration codes below)

#### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
ART 105, 130, or 131 fulfills 3 credits of this requirement. Complete a course from the Social Science or Leadership & Ethics category.	
Computer and Information Literacy Requirement .....	†
Core courses fulfill this requirement	
Special Requirement	
ART 105, 130 or 131 fulfill this requirement.	
<b>Subtotal</b> .....	<b>15</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
DAR 101	Color Rendering and Theory .....	4
DAR 102	Fundamentals of Digital Design .....	4
DAR 111*	Typography .....	4
DAR 112	Graphic Design .....	4
DAR 120	Applied Computer Graphics .....	4
DAR 122*	DeskTop Graphics: Adobe Illustrator .....	4
DAR 221*	Photo Image Editing: Adobe PhotoShop .....	4
DAR 226*	DeskTop Publishing for Digital Arts: Adobe InDesign .....	4
DAR 256*	Web Design I .....	4
DAR 288*	Digital Arts Business and Portfolio Capstone .....	2
<b>Subtotal</b> .....		<b>38</b>

**Required Support Course**

ART 105	Exploring Art and Visual Studies	3
or ART 130	Art and Culture: Prehistoric Through Gothic SUN# ART 1101	
or ART 131	Art and Culture: Late Gothic Through Modern Periods SUN# ART 1102	
<b>Subtotal</b>		<b>3</b>

**Core Concentrations - A grade of C or better is required for graduation.**

Complete one of the following concentrations:

Department faculty advisor or counselor approval is recommended in the selection of the program concentration.

**Design** (Concentration Code: DARD)

ART/DAR 128*	Digital Photography I	4
DAR 210*	Digital Arts Design Studio: Advertising Design	4
DAR 211*	Digital Arts Design Studio: Product Design	4
DAR 212	Digital Arts Design Studio: Package Design	4
DAR 230*	Production Techniques for Print	4
<b>Subtotal</b>		<b>20</b>

**Illustration** (Concentration Code: DARI)

ART/DAR 128*	Digital Photography I	4
DAR 140*	Digital Arts Illustration Studio: Illustration Technique and Media	4
DAR 145*	Digital Arts Illustration Studio: Character Development for Animation & Print	4
DAR 230*	Production Techniques for Print	4
DAR 240*	Digital Arts Illustration Studio: Book Illustration	4
<b>Subtotal</b>		<b>20</b>

**Multimedia** (Concentration Code: DARM)

DAR 103	Introduction to Digital Video and Film Arts	4
DAR 115*	Digital Video Editing	4
DAR 250*	Computer 2D Animation: Adobe After Effects	4
DAR 251*	Computer 3D Animation: Maya	4
DAR 252*	Interactive Design I	4
<b>Subtotal</b>		<b>20</b>

**Web Design** (Concentration Code: DARW)

DAR 103	Introduction to Digital Video and Film Arts	4
DAR 115*	Digital Video Editing	4
DAR 252*	Interactive Design I	4
DAR 254*	Interactive Design II	4
DAR 257*	Advanced Web Design	4
<b>Subtotal</b>		<b>20</b>

**Total credits as displayed 76**

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# Digital and Film Arts

## Digital and Film Arts — Associate of Applied Science Degree for Direct Employment

Prepare for a career in television, film, video or other media. Courses cover filming, editing, production, design, lighting, script writing, and photography. Students also have internship opportunities. Students seeking to transfer into a digital/film arts program at a university should pursue an Associate of Arts degree.

### What can I do with this degree?

**Career Options:** Leads to careers in television, film and audio production, including producer, editor, director, writer, camera operator, sound designer, web designer and graphic designer.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6976

Program/Major Codes: **AASDIGIFILM/MEF**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 and 102 fulfill this requirement	
Analysis and Critical Thinking Requirement . . . . .	6
Humanities and Social Science Requirement . . . . .	6
Computer and Information Literacy Requirement . . . . .	†
CSA 100 fulfills this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal . . . . .</b>	<b>12</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

DAR 103	Introduction to Digital Video and Film Arts . . . . .	3
DAR 115*	Digital Video Editing . . . . .	4
DAR 124	Writing for Film and Television . . . . .	3
DAR 125*	Digital Cinematography I . . . . .	4
DAR 173	History of American Cinema . . . . .	3
DAR 175*	The Art of Digital Cinematography . . . . .	3
DAR 205*	Lighting for Film and Video . . . . .	4
DAR 217*	Post Production for Film . . . . .	4
DAR 225*	Digital Cinematography II . . . . .	4
DAR 275	Basic Audio Production . . . . .	4
DAR 285	Documentary Television and Film Production . . . . .	4
DAR 286*	Digital Cinematography Capstone . . . . .	4
<b>Subtotal . . . . .</b>		<b>44</b>

### Required Support Courses

CSA 100*	Computer Fundamentals . . . . .	1
WRT 101*	English Composition I SUN# ENG 1101 . . . . .	3
WRT 102*	English Composition II SUN# ENG 1102 . . . . .	3

Electives .....	3-4
Select 1 course from the following list: DAR 176, 224*, 290E2*.	
<b>Subtotal</b> .....	<b>10-11</b>
<b>Total credits as displayed</b> .....	<b>66-67</b>

† Core or support course(s) fulfill this requirement.  
 ‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Digital and Film Arts Animation — Associate of Applied Science Degree for Direct Employment

Develop skills in animation, cinematography, video production and script writing. Courses also cover drawing, illustration, cartooning, digital imaging and computer animation. Students seeking to transfer into a digital/film animation program at a university should complete an Associate of Arts degree.

### What can I do with this degree?

- Career Options:** Obtain employment as a writer, producer, editor, director, camera operator, sound designer, or graphic artist.
- Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.
- Location:** West Campus
- Department/Contact Information:**  
 Dean: 520-206-6690  
 Lead Faculty: 520-206-6976  
 Program/Major Codes: **AASANIMATION/ANM**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 and 102 fulfill this requirement	
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
DAR 250 fulfills 3 credits of this requirement. Complete a course from the Social Science or the Leadership/Ethics category.	
Computer and Information Literacy Requirement that also fulfills the C or G requirement .....	†
CSA 100 fulfills this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> .....	<b>9‡</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
DAR 101	Color Rendering and Theory .....	4
DAR 103	Introduction to Digital Video and Film Arts .....	3
DAR 115*	Digital Video Editing .....	4
DAR 120	Applied Computer Graphics .....	4
DAR 122*	DeskTop Graphics: Adobe Illustrator .....	4
DAR 124	Writing for Film and Television .....	3
DAR 140*	Digital Arts Illustration Studio: Illustration Technique and Media .....	4
DAR 176	Digital Animation .....	4
DAR 221*	Photo Image Editing: Adobe PhotoShop .....	4
DAR 250*	Computer 2-D Animation: Adobe After Effects .....	4
DAR 251*	Computer 3-D Animation: Maya .....	4

DAR 258*	Advanced Computer 3-D Animation: Maya .....	4
<b>Subtotal</b> .....		<b>46</b>
<b>Required Support Courses</b>		
CSA 100*	Computer Literacy .....	1
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102 .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>62</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Digital and Film Arts — Associate of Arts Degree for Transfer

A student planning to obtain a Digital and Film Arts degree should follow the **Associate of Arts Degree for Transfer in Liberal Arts**.

The program is designed to prepare students to transfer to a four-year college or university program in audio, film, and/or video. Good writing skills and creative background in art, design, computers, and photography are helpful in this degree option.

Verification of transfer courses should be established with the transfer university or college or a Pima Community College counselor or faculty advisor.

Program/Major Codes: **AOALIBRALART/ALA**

## Digital Game and Simulation

### Digital Game and Simulation — Associate of Applied Science Degree for Direct Employment

Prepare for a career in digital games and simulations.

#### *What can I do with this degree?*

**Career Options:** Become a game play tester; game designer or programmer; or an artist, character builder, or modeler working with digital games and simulations.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6908

Program/Major/Concentration Codes: **AASDAG/DAG/\*\*\*\*** (see concentration codes below)

#### **General Education Courses - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement** .....	3
MAT 145 or 188 fulfills 3 credits of this requirement. Complete a course from the Science or Critical Thinking category.	
Humanities and Social Science Requirement*** .....	6

Computer and Information Literacy Requirement .....	†
Core courses fulfill this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>15¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
GAM 101	Game Design I .....	4
GAM 102*	Game Design II .....	4
GAM 120*	Introduction to Game Programming .....	4
GAM 201*	Game Design III .....	4
GAM 218*	Game Design Portfolio Capstone .....	4
<b>Subtotal .....</b>		<b>20</b>

<b>Core Concentrations - A grade of C or better is required for graduation.</b>	
Complete courses from one of the following concentrations: .....	27-31
Department faculty or advisor approval is recommended.	

<b>Digital Programming</b> (Concentration Code: DAGP)		
CIS 129*	Programming and Problem Solving I .....	5
CIS 131*	Programming and Problem Solving II .....	5
CIS 142*	Introduction to C# .....	4
CIS 278*	C++ and Object-Oriented Programming .....	4
CIS 279*	Java Programming .....	5
GAM 150*	Game Programming I .....	4
GAM 296*	Independent Study in Game Design .....	1-4
MAT 188*	Precalculus I .....	4
<b>Subtotal .....</b>		<b>32-35</b>

<b>Digital Animation and Production</b> (Concentration Code: DAGA)		
ART 213*	Life Drawing I .....	3
DAR 120	Applied Computer Graphics .....	4
DAR 122*	Desktop Graphics: Adobe Illustrator .....	4
DAR 221*	Photo Image Editing: Adobe Photoshop .....	4
DAR 250*	Computer 2D Animation: Adobe After Effects .....	4
DAR 251*	Computer 3D Animation: Maya .....	4
DAR 252*	Interactive Design I .....	4
DAR 258*	Advanced Computer 3D Animation: Maya .....	4
MAT 145*	Mathematics for Game Design .....	4
<b>Subtotal .....</b>		<b>35</b>
<b>Total credits as displayed .....</b>		<b>67-70</b>

† Core or support course(s) fulfill this requirement.  
 ¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* Physics is recommended.  
 \*\*\* ART 100 or 110 is recommended.

# Direct Care Professional

**This program is under review. No students are currently being admitted to the program.**

## Basic Direct Care Professional — Certificate for Direct Employment

Gain the basic knowledge and skills needed to provide direct care for the aged or for individuals with physical, mental or developmental disabilities.

### *What can I do with this certificate?*

**Career Options:** Work for a health care agency providing care to individuals in a home setting who need assistance due to aging and physical disabilities, Alzheimer's and other forms of dementia, and developmental disabilities.

**Academic Options:** Pursue a Certified Nursing Assistant (CNA) certificate, Licensed Practical Nurse (LPN) or Registered Nurse (RN) program, or a Special Education Teaching certificate.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5098

Program/Major Codes: **CRTDCP/DCP**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
DCP 101	Direct Support Professional: Principles of Care Giving .....	2.25
DCP 102*	Direct Support Professional: Aging and Physical Disabilities .....	2
DCP 103*	Direct Support Professional: Alzheimer's and Other Forms of Dementia .....	2
DCP 104*	Direct Support Professional: Developmental Disabilities .....	2
<b>Total credits as displayed .....</b>		<b>8.25</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description.

# Education

From infancy through high school, from classroom basics to advanced certification, gain the skills to educate tomorrow's leaders.

- Early Childhood Education
- Teacher Education
- Educational Technology

## Early Childhood Studies

Prepare to care for children, birth through age five, by learning theories and skills to best support young children's growth and development.

### Early Childhood Studies — Certificate for Employed Professionals

Learn fundamental concepts in Early Care and Education. Courses focus on child development, learning and culture as well as teaching techniques, observation, and curriculum.

**Before enrolling in this program,** students must be working in a Department of Health Services-licensed, Department of Economic Security-certified, or tribally-regulated program with children from birth through age 5 years not yet in kindergarten. Most courses are site based at the student's place of employment.

#### *What can I do with this certificate?*

**Career Options:** Apply for the national Child Development Associate credential; or meet the CDA equivalency as defined by the National Association for the Education of Young Children (NAEYC), develop skills working with young children, or use the coursework to meet the state Department of Health Services professional development requirements.

**Academic Options:** Continue your studies by applying your coursework towards the Advanced Early Childhood Studies Certificate and/or the Early Childhood Studies AAS.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-20/19.0706-Gedt.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5105

Center for Early Childhood Studies: 520-206-5245

Lead Faculty: 520-206-5107

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CDA 102	The Child's Total Learning Environment .....	1
CDA 103	Curriculum Planning and Schedule Development .....	1
CDA 121	Techniques for Observing Children .....	1
CDA 155	Understanding How Children Learn and Develop .....	1
CDA 161	Principles of Social Competence .....	1
CDA 222	Elements of Children's Culture .....	1
CDA 271	Professionalism in Childcare .....	1
ECE 115	Supervision and Administration of Early Childhood Programs.....	3
ECE 117	Child Growth and Development .....	3
Electives:	Complete 4 credits in any combination from ECE and/or CDA courses: .....	4
<b>Total credits as displayed .....</b>		<b>17</b>



## Advanced Early Childhood Studies — Certificate for Direct Employment

Acquire theoretical knowledge and develop the competencies needed to enter a career and to continue professional growth in the care and education of children birth through age eight in various settings.

**Before enrolling in this program**, you must meet the requirements listed below:

- Valid Arizona Identity Verified Fingerprint (IVP) Clearance Card
- TB Test (negative result or a negative chest x-ray)
- Verification of required Immunizations

### What can I do with this certificate?

**Career Options:** Apply for a position working with young children, or use the coursework to meet state Department of Health Service professional development requirements.

**Academic Options:** Continue your studies by applying your coursework toward the Early Childhood Studies AAS.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-13/13.1210-Gedt.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5105

Center for Early Childhood Studies: 520-206-5245

Lead Faculty: 520-206-5107

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or contact the Center for Early Childhood Studies at 520-206-5245 for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
ECE 117	Child Growth and Development .....	3
ECE 118	Foundations of Early Childhood Education ( <i>was ECE 200</i> ) (only if taken after Summer 2014).....	3
or CDA 102	The Child's Total Learning Environment .....	1
and CDA 121	Techniques for Observing Children .....	1
and CDA 271	Professionalism in Childcare .....	1
ECE 226*	Positive Child Guidance .....	3
ECE 228*	The Young Child: Family, Culture, and Community .....	3
ECE 240*	Assessment of Young Children .....	3
ECE 246*	Integrating Learning and Lesson Planning: Literacy ( <i>was ECE 110</i> ) .....	3
ECE 292*	Early Childhood Education: Theory to Practice ( <i>was ECE 190</i> ) .....	4
<b>Total credits as displayed .....</b>		<b>22</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Early Childhood Studies — Associate of Applied Science Degree for Direct Employment

Learn to excel at caring for and educating young children through this flexible, high-quality program. Students planning to transfer to a bachelor's degree program should pursue the Early Childhood Education AA degree.

**Before enrolling in this program**, you must meet the requirements listed below:

- Valid Arizona Identity Verified Fingerprint (IVP) Clearance Card
- TB Test (negative result or a negative chest x-ray)
- Verification of required Immunizations

### What can I do with this degree?

**Career Options:** Become a teacher's aide, lead teacher or director of a pre-school center, or open your own home child care center.

**Academic Options:** While this program was not designed to transfer to a bachelor’s degree program, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5105

Center for Early Childhood Studies: 520-206-5245

Lead Faculty: 520-206-5107

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

**General Education Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>19-21</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

ECE 117	Child Growth and Development .....	3
ECE 118	Foundations of Early Childhood Education ( <i>was ECE 200</i> ) (only if taken after Summer 2014).....	3
	or CDA 102	
	The Child’s Total Learning Environment .....	1
	and CDA 121	
	Techniques for Observing Children .....	1
	and CDA 271	
	Professionalism in Childcare .....	1
ECE 226*	Positive Child Guidance .....	3
ECE 228	The Young Child: Family, Culture, and Community .....	3
ECE 240*	Assessment of Young Children .....	3
ECE 246*	Integrating Learning and Lesson Planning: Literacy ( <i>was ECE 110</i> ) .....	3
ECE 292*	Early Childhood Education: Theory to Practice ( <i>was ECE 190</i> ) .....	4
Electives: Complete 17-19 credits so that the total credits is at least 60. Contact the Center for Early Childhood Studies to select appropriate electives, which can include additional ECE and/or CDA courses .....		
<b>Subtotal .....</b>		<b>.41</b>
<b>Total credits as displayed .....</b>		<b>60-62</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

**Early Childhood Education — Associate of Arts Degree for Transfer**

Learn to teach young children effectively while preparing to transfer to a bachelor’s degree program with birth-3rd grade teaching certification.

**Before enrolling in this program,** you must meet the requirements listed below:

- Valid Arizona Identity Verified Fingerprint (IVP) Clearance Card
- TB Test (negative result or a negative chest x-ray)
- Verification of required Immunizations

**What can I do with this degree?**

**Career Options:** Become a teacher’s aide, lead teacher or director of a pre-school center, paraprofessional, or instructional aide, or open your own home child care center.

**Academic Options:** Transfer to a bachelor's degree program in early childhood with birth-3rd grade teaching certification.

**Location:** Desert Vista Campus.

**Department/Contact Information:**

Dean: 520-206-5105

Center for Early Childhood Studies: 520-206-5245

Lead Faculty: 520-206-5107

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or contact the Center for Early Childhood Studies at 520-206-5245 for details.

**General Education Requirements A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts..... †	
ART 105 and HIS 101 fulfill this requirement.	
Biological and Physical Sciences .....	†
BIO 105IN and the Earth/Space or Physical Science course fulfill this requirement	
Mathematics .....	†
MAT 141 or 142 fulfills this requirement.	
Social and Behavioral Sciences .....	†
HIS 141 or 142, and POS 210 fulfill this requirement	
Other Requirements .....	†
The Language requirement fulfills this requirement. If fewer than two language courses are completed, select other courses to fulfill this requirement**	
Special Requirements	
HIS 101 and either HIS 141 or 142 fulfill this requirement	
<b>Subtotal .....</b>	<b>6¥</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

ECE 117	Child Growth and Development .....	3
ECE 118	Foundations of Early Childhood Education .....	3
ECE 226*	Positive Child Guidance.....	3
<b>Subtotal .....</b>		<b>9</b>

**Required Support Courses**

ART 105	Exploring Art and Visual Culture .....	3
BIO 105IN	Environmental Biology .....	4
HIS 101	Introduction to Western Civilization I.....	3
HIS 141	History of the United States I SUN# HIS 1131.....	3
or HIS 142	History of the United States II SUN# HIS 1132	
Earth/Space Science or Physical Science: Choose one of the following: .....		4
AST 101IN	Solar System	
AST 102IN*	Stars, Galaxies, Universe	
CHM 121IN	Chemistry and Society I	
GEO 101	Physical Geography: Weather and Climate	
GEO 102	Physical Geography: Land Forms and Oceans	
GLG 101IN	Physical Geology SUN# GLG 1101	
GLG 102IN*	Historical Geology	
Language: Complete 4 semesters of the same language to the 202 Level** .....		16
MAT 141 or 142*	Topics in College Mathematics .....	3-4
(or any Math course numbered 151 or higher)		
MAT 146*	Mathematics for Elementary Teachers I .....	3
MAT 147*	Mathematics for Elementary Teachers II .....	3
POS 210	National and State Constitutions .....	3
SCT 280*	Process of Science for Elementary Educators I .....	3
<b>Subtotal .....</b>		<b>48-49</b>
<b>Total credits as displayed .....</b>		<b>63-64</b>

† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* This Language requirement is based on various language course/proficiency requirements at the bachelor's degree level. If the Language requirement is completed in fewer than 16 credits, additional credit hours of transferable electives, including ECE courses, may need to be completed to meet the minimum associate's degree requirements of 60 credit hours. Students transferring to ASU, to a non-public in-state school, or an out-of-state school that does not require language, may request a substitution through the Center for Early Childhood Education at skukla@pima.edu for this requirement.

## K-12 Education

Prepare to become an elementary or secondary school teacher In general education or special education.

Students who do not hold a bachelor's degree and plan to teach elementary school should pursue the **Elementary Education Associate of Arts degree for transfer**; those who wish to teach secondary school should pursue an Associate of Arts degree for transfer. All students will need to complete a bachelor's degree at a 4-year college or university before becoming a teacher.

Students who hold a bachelor's degree in any discipline may be eligible to enroll in the Post-Degree Teacher Certification program and immediately start working toward teacher certification and advanced endorsements.

### Elementary Education — Associate of Arts for Transfer

Complete the first two years of an elementary education degree and transfer to a four-year degree program.

#### What can I do with this degree?

**Career Options:** Elementary school instructional aide.

**Academic Options:** Transfer to a bachelor's degree program with elementary education certification. Students interested in secondary education, rehabilitation or special education should pursue the general Associate of Arts degree.

**Locations:** Classes can be taken at multiple campuses.

**Department/Contact Information:**

Dean: 520-206-5105

Lead Faculty: 520-206-5107

Program/Major/Concentration Codes: **AOAEDUCATION/EDU**

#### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts. ....	†
ART 105 and HIS 101 fulfill this requirement.	
Biological and Physical Sciences .....	†
BIO 105IN and the Earth/Space or Physical Science course fulfill this requirement	
Mathematics.....	†
MAT 142 fulfills this requirement.	
Social and Behavioral Sciences .....	†
GEO 103 and POS 210 fulfill this requirement	
Other Requirements .....	†
HIS 141 and either the language or CMN course fulfill this requirement.	
Special Requirements	
HIS 101 and 141 fulfill the I, C, and G requirements.	
<b>Subtotal .....</b>	<b>6¥</b>

Course Number	Course Title	Credit Hours
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#### Required Core Courses - A grade of C or better is required for graduation.

EDU 200	Introduction to Education .....	3
EDU 201	Diversity in Education .....	3

EDU 202	Introduction to the Exceptional Learner .....	3
EDU 206	Relationships in Classroom Settings .....	3
ETT 101	Introduction to Educational Technology .....	3
Speech Communication or Language: .....		3-5
Students planning to attend ASU or NAU may choose one of the following speech courses or a language course:		
CMN 102	Introduction to Speech Communication SUN# COM 1100	
CMN 110	Public Speaking	
Students planning to attend the UA must complete a 4th semester language course from the following:		
ASL 202, CHI 202, FRE 202, GER 202, JPN 202, SPA 202 or 203		
<b>Subtotal</b> .....		<b>18-20</b>

### Required Support Courses

ART 105	Exploring Art and Visual Culture .....	3
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#### History:

Complete both courses .....		6
HIS 101	Introduction to Western Civilization I	
HIS 141	History of the United States I SUN# HIS 1131	

#### Life Science:

BIO 105IN	Environmental Biology .....	4
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#### Earth/Space Science or Physical Science:

Choose one of the following: .....		4-5
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AST 101IN	Solar System	
AST 102IN*	Stars, Galaxies, Universe	
CHM 121IN	Chemistry and Society I	
CHM 130IN*	Fundamental Chemistry SUN# CHM 1130	
CHM 151IN*	General Chemistry I SUN# CHM 1151	
GEO 101	Physical Geography: Weather and Climate	
GEO 102	Physical Geography: Land Forms and Oceans	
GLG 101IN	Physical Geology SUN# GLG 1101	
GLG 102IN	Historical Geology	
PHY 121IN*	Introductory Physics I SUN# PHY 1111	

#### Elementary Science:

SCT 280*	Process of Science for Elementary Educators I .....	3
SCT 281*	Process of Science for Elementary Educators II .....	3

#### Mathematics:

Complete all three courses: .....		9-10
MAT 141 or 142*	Topics in College Mathematics (or any Math course numbered 151 or higher)	
MAT 146*	Mathematics for Elementary Teachers I	
MAT 147*	Mathematics for Elementary Teachers II	

#### Civics and Government:

POS 210	National and State Constitutions .....	3
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#### Social and Behavioral Science:

GEO 103	Cultural Geography .....	3
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<b>Subtotal</b> .....		<b>38-40</b>
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<b>Total credits as displayed</b> .....		<b>62-66</b>
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† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Education — Elementary Certification — Post-Degree Certificate for Direct Employment

Prepare for Arizona General Education Elementary (grades 1-8) teacher certification with this post-degree program. Courses emphasize professional teaching standards, technology, data literacy, diversity and current teaching theory, and include supervised and directed internship.

**Before enrolling in this program**, you must see a program coordinator and meet the following admission requirements:

- Bachelor's degree from an accredited institution
- Passing score on NES Elementary Subject Knowledge exam

- Passing score on Writing assessment (WritePlacer or similar)
- Valid Arizona Identify Verified Fingerprint (IVP) Clearance Card

**What can I do with this certificate?**

**Career Options:** Elementary school teacher.

**Academic Options:** Continue your education with post-graduate work in education offered by Pima.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-12/13.1202-Gedt.html>

**Location:** Desert Vista Campus and online

**Department/Contact Information:**

Dean: 520-206-5105

Program Manager/Department Chair: 520-206-5144

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
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**Required Core Courses – Must be completed with grades of C or higher. Field Experience must be completed with grades of B or higher. A program GPA of 3.0 or higher is required for graduation.**

**Foundations:**

EDC/ESE 250	Introduction to Teaching .....	3
EDC/ESE 251	Educational Psychology .....	3
EDC/ESE 252	Survey of Exceptional Education .....	3
EDC 254*	Classroom Management: Elementary .....	3
EDC/ESE 257	21st Century Learning .....	3
<b>Subtotal</b> .....		<b>15</b>

**Methods Courses:**

EDC 270*	Elementary Methods: English Language Arts .....	3
EDC 271*	Elementary Methods: Math .....	3
EDC 272*	Elementary Methods: Reading/Phonics .....	3
EDC 273*	Elementary Methods: Science/Social Studies .....	3
EDC 274*	Elementary Methods: Instruction Across the Curriculum .....	3
<b>Subtotal</b> .....		<b>15</b>

**Pathways**

Candidates who are not currently teaching in an elementary classroom take the Traditional Pathway.

Candidates who are currently teaching full time in an elementary classroom on an intern certificate take the Internship Pathway

**Field Experiences (Traditional Pathway)**

EDC 262	Practicum 1: Elementary .....	2
EDC 263	Practicum 2: Elementary .....	2
EDC 291	Student Teaching: Elementary .....	8
<b>Subtotal</b> .....		<b>12</b>

**Field Experiences (Internship Pathway)**

EDC 266	Internship Practicum .....	2
EDC 291A	Student Teaching I: Elementary .....	4
EDC 291B	Student Teaching II: Elementary .....	4
<b>Subtotal</b> .....		<b>10</b>



**Required Support Courses – Must be completed with grades of C or higher.**

EDC 286	Structured English Immersion Methods .....	3
POS 210**	National and State Constitutions .....	0-3
<b>Subtotal</b> .....		<b>3-6</b>
<b>Total credits as displayed</b> .....		<b>43-48</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* This course is not required with an official passing score in the Constitutions of the U.S. and Arizona AEPA (Arizona Educator Proficiency Assessment.) See program coordinator for additional information.

## Education — Secondary Certification — Post-Degree Certificate for Direct Employment

Prepare for Arizona General Education Secondary (grades 6-12) teacher certification with this post-degree program. Courses emphasize professional teaching standards, technology, data literacy, diversity and current teaching theory, and include supervised and directed internship.

**Before enrolling in this program**, you must see a program coordinator and meet the following admission requirements:

- Bachelor's degree from an accredited Institution
- Passing score on relevant NES/AEPA Secondary Subject Knowledge exam or Master's degree In the discipline
- Passing score on Writing assessment (WritePlacer or similar)
- Valid Arizona Identify Verified Fingerprint (IVP) Clearance Card

### What can I do with this certificate?

**Career Options:** Secondary school teacher.

**Academic Options:** Continue your education with post-graduate work in education offered by Pima.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-12/13.1202-Gedt.html>

**Location:** Desert Vista Campus and online

**Department/Contact Information:**

Dean: 520-206-5105

Program Manager/Department Chair: 520-206-5144

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
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**Required Core Courses – Must be completed with grades of C or higher. Field Experiences must be completed with grades of B or higher. A program GPA of 3.0 or higher is required for graduation.**

### Foundations:

EDC/ESE 250	Introduction to Teaching .....	3
EDC/ESE 251	Educational Psychology .....	3
EDC/ESE 252	Survey of Exceptional Education .....	3
EDC 256	Classroom Management: Secondary .....	3
EDC/ESE 257	21st Century Learning .....	3
<b>Subtotal</b> .....		<b>15</b>

### Methods:

EDC 275	Secondary Methods: English Language Arts/Social Sciences .....	3
or EDC 276	Secondary Methods: Math/Science .....	
EDC 277	Secondary Methods: Instruction Across the Curriculum .....	3
<b>Subtotal</b> .....		<b>6</b>

## Pathways

Candidates who are not currently teaching in a secondary classroom take the Traditional Pathway.

Candidates who are currently teaching full time in a secondary classroom on an intern certificate take the Internship Pathway.

### Field Experiences (Traditional Pathway)

EDC 264	Practicum 1: Secondary .....	2
EDC 265	Practicum 2: Secondary .....	2
EDC 292	Student Teaching: Secondary .....	8
<b>Subtotal</b> .....		<b>12</b>

### Field Experiences (Internship Pathway)

EDC 266	Internship Practicum .....	2
EDC 292A	Student Teaching I: Secondary .....	4
EDC 292B	Student Teaching II: Secondary .....	4
<b>Subtotal</b> .....		<b>10</b>

### Required Support Courses – Must be completed with grades of C or higher.

EDC 286	Structured English Immersion Methods .....	3
POS 210**	National and State Constitutions .....	0-3
<b>Subtotal</b> .....		<b>3-6</b>
<b>Total credits as displayed</b> .....		<b>34-39</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* This course is not required with an official passing score in the Constitutions of the U.S. and Arizona AEPA (Arizona Educator Proficiency Assessment.) See a program coordinator for additional information.

## Special Education Mild-Moderate Disabilities Certification — Post-Degree Certificate for Direct Employment

Prepare for Arizona Special Education Mild-Moderate Disabilities (grades K-12) certification. This post-degree program applies to students who do not have K-12 teacher certification. Courses emphasize professional teaching standards, instruction for students with diverse needs, technology, current teaching theory, and include supervised and directed field experiences.

**Before enrolling in this program**, you must see a program coordinator and meet the following admission requirements:

- Bachelor's degree from an accredited Institution
- Passing score on NES Elementary Subject Knowledge exam
- Passing score on Writing assessment (WritePlacer or similar)
- Valid Arizona Identify Verified Fingerprint (IVP) Clearance Card

### What can I do with this certificate?

**Career Options:** Special Education Mild-Moderate Disabilities K-12 Teacher.

**Academic Options:** Continue your education with post-degree work in education offered by Pima.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-11/13.1099-Gedt.html>

**Location:** Desert Vista Campus and online

#### Department/Contact Information:

Dean: 520-206-5105

Program Manager/Department Chair: 520-206-5144

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Courses – Must be completed with grades of C or higher. Field experiences must be completed with grades of B or higher. A program GPA of 3.0 or higher is required for graduation.</b>		
<b>Foundations:</b>		
EDC/ESE 250	Introduction to Teaching .....	3
EDC/ESE 251	Educational Psychology .....	3
EDC/ESE 252	Survey of Exceptional Education .....	3
ESE 254*	Foundations of Instruction: Mild-Moderate Disabilities .....	3
ESE 255	Classroom Management for Mild-Moderate Disabilities .....	3
EDC/ESE 257	21st Century Learning .....	3
<b>Subtotal</b> .....		<b>18</b>
<b>Methods:</b>		
ESE 270	Methods of Instruction: Students/Mild-Moderate Disabilities .....	3
ESE 271*	Mild-Moderate Methods: K-12 Instruction Across the Curriculum.....	3
ESE 272*	Developmental Reading, Instruction, Assessment, Remediation.....	3
ESE 273	Diagnosis and Assessment of Mild-Moderate Disabilities.....	3
<b>Subtotal</b> .....		<b>12</b>
<b>Pathways</b>		
Candidates who are not currently teaching in a Mild-Moderate Special Education classroom take the Traditional Pathway. Candidates who are currently teaching full time in a Mild-Moderate Special Education classroom on an intern certificate take the Internship Pathway.		
<b>Field Experiences (Traditional Pathway)</b>		
ESE 260	Practicum 1: Mild-Moderate Disabilities .....	2
ESE 261	Practicum 2: Mild-Moderate Disabilities .....	2
ESE 290	Student Teaching: Mild-Moderate Disabilities.....	8
<b>Subtotal</b> .....		<b>12</b>
<b>Field Experiences (Internship Pathway)</b>		
EDC 266	Internship Practicum .....	2
ESE 290A	Student Teaching I: Mild-Moderate Disabilities .....	4
ESE 290B	Student Teaching II: Mild-Moderate Disabilities.....	4
<b>Subtotal</b> .....		<b>10</b>
<b>Required Support Courses - Must be completed with grades of C or higher.</b>		
EDC 286	Structured English Immersion Methods .....	3
POS 210**	National and State Constitutions.....	0-3
<b>Subtotal</b> .....		<b>3-6</b>
<b>Total credits as displayed</b> .....		<b>43-48</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section

\*\* This course is not required with an official passing score in the Constitutions of the U.S. and Arizona AEPA (Arizona Educator Proficiency Assessment.) See a program coordinator for additional information.

## Special Education Mild-Moderate Disabilities Certification for Certified Teachers — Post-Degree Certificate for Direct Employment

Prepare for Arizona Special Education Mild-Moderate Disabilities (grades K-12) certification. This post-degree program applies to students who have Elementary, Secondary, or Special Education teacher certification. Courses emphasize professional teaching standards, technology, diversity and current teaching theory, and include supervised and directed field experiences. A program GPA of 3.0 or higher is required for graduation.

**Before enrolling in this program, you must earn a bachelor’s degree and meet additional admission requirements.**

**Before enrolling in this program, you must see a program coordinator and meet the following admission requirements:**

- Bachelor’s degree from an accredited Institution
- Passing score on NES Elementary Subject Knowledge exam
- Passing score on Writing assessment (WritePlacer or similar)
- Valid Arizona Identify Verified Fingerprint (IVP) Clearance Card
- Elementary or Secondary Teaching Certificate

### What can I do with this certificate?

**Career Options:** Special Education Mild-Moderate Disabilities K-12 Teacher.

**Academic Options:** Continue your education with post-degree work in education offered by Pima.

**Location:** Desert Vista Campus and online

**Department/Contact Information:**

Dean: 520-206-5105

Program Manager/Department Chair: 520-206-5144

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
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**Required Core Courses – Must be completed with grades of C or higher. Field experiences must be completed with grades of B or higher. A program GPA of 3.0 or higher is required for graduation.**

**Foundations:**

EDC/ESE 252	Survey of Special Education .....	3
ESE 254*	Foundations of Instruction: Mild-Moderate Disabilities .....	3
ESE 255	Classroom Management for Mild-Moderate Disabilities .....	3
EDC/ESE 257	21st Century Learning .....	3
<b>Subtotal</b> .....		<b>12</b>

**Methods:**

ESE 270	Methods of Instruction: Students/Mild-Moderate Disabilities .....	3
ESE 271*	Mild-Moderate Methods: K-12 Instruction Across the Curriculum .....	3
ESE 272*	Developmental Reading, Instruction, Assessment, Remediation .....	3
ESE 273	Diagnosis and Assessment of Mild-Moderate Disabilities .....	3
<b>Subtotal</b> .....		<b>24</b>

**Pathways**

Candidates who are not currently teaching in a Mild-Moderate Special Education classroom take the Traditional Pathway. Candidates who are currently teaching full time in a Mild-Moderate Special Education classroom but are not certified in Mild-Moderate Special Education take the Internship Pathway.

**Field Experiences (Traditional Pathway)**

ESE 260	Practicum 1: Mild-Moderate Disabilities .....	2
ESE 261	Practicum 2: Mild-Moderate Disabilities .....	2
ESE 290	Student Teaching: Mild-Moderate Disabilities .....	8
<b>Subtotal</b>	.....	<b>12</b>

**Field Experiences (Internship Pathway)**

ESE 290A	Student Teaching I: Mild-Moderate Disabilities .....	4
ESE 290B	Student Teaching II: Mild-Moderate Disabilities .....	4
<b>Subtotal</b>	.....	<b>8</b>

**Required Support Courses**

EDC 286**	Structured English Immersion Methods .....	3
POS 210***	National and State Constitutions .....	0-3
<b>Subtotal</b>	.....	<b>3-6</b>
<b>Total credits as displayed</b>	.....	<b>36-42</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section

\*\* This course is not required if an SEI Endorsement is displayed on the student's teaching certificate.

\*\*\* This course is not required with an official passing score in the Constitutions of the U.S. and Arizona AEPA (Arizona Educator Proficiency Assessment). See Program advisor for additional information.

# Emergency Medical Technology

## Emergency Medical Technology — Certificate for Direct Employment

Learn pre-hospital emergency medical care, including physical assessment, medical techniques and ambulance operations. This program is approved by the Arizona Department of Health Services, Bureau of Emergency Medical Services towards certification as an EMT in the State of Arizona. Complete this program by taking classes exclusively on weekdays or exclusively on evenings.

### Before enrolling in this program you must meet certain admission requirements:

- Be 18 years old when class starts.
- Provide proof of a negative drug screening; obtain a drug screen form and instructions from the EMT Service Center at East Campus.
- Provide a fingerprint clearance card or be fingerprinted the first day of class.
- Have cardio-pulmonary resuscitation (CPR) certification at the Healthcare Provider level with at least 6 months left in the certification period. This card must remain current throughout the EMT program and the certification process.
- Have the ability to lift 125 pounds alone and 250 pounds with a partner.
- Must provide proof of personal medical insurance. This coverage must remain current throughout the course.
- Score at least 84 on the College Reading Assessment test.
- Meet with EMT Service Center staff prior to enrolling in the course.
- Provide immunization records for: Measles, Mumps, Rubella (MMR), Varicella (VZV, Varivax)
- Tetanus/Diphtheria (adult type e.g., Td or Tdap) within the last ten years.
- Tuberculosis (TB) screening indicating negative activity (given no more than six months prior to the beginning of the course)
- Hepatitis B vaccination series (HBV is encouraged but is not required)
- Flu vaccine is highly encouraged

**EMT Program information is available online at** <https://www.pima.edu/programs-courses/credit-programs-degrees/public-safety/emt/basic-emt.html>

Certification testing requires an additional fee to the National Registry of Emergency Medical Technicians (NREMT). Students with felony and some misdemeanor convictions may not be eligible for certification—contact the Arizona Department of Health Services for additional information about eligibility.

### What can I do with this certificate?

**Career Options:** Take required Arizona and National Registry of Emergency Medical Technicians exams that qualify you to work as an emergency medical technician.

**Academic Options:** Once you receive EMT certification and work as an emergency medical technician, continue your studies by pursuing the Paramedic Associate of Applied Science Degree.

**Locations:** East Campus, Community Campus

#### Department/Contact Information:

Dean: 520-206-7694

EMT Lab: 520-206-7839

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Course - A grade of C or better is required for graduation.</b>		
EMT 100*	Emergency Medical Technology .....	12
<b>Total credits as displayed .....</b>		<b>12</b>



## Emergency Medical Technology — Paramedic — Associate of Applied Science Degree for Direct Employment

The Associate of Applied Science program increases the knowledge and skill of the I-EMT and the EMT-B in advanced life support including endotracheal intubation, cardiac arrhythmia recognition and intervention. The program also includes drug therapy, invasive procedures, advanced airway management, and I.V. therapy.

**Before enrolling in this program,** you must meet certain admission requirements:

- American Heart Association Basic Life Support for the Healthcare Provider certification card. This card must remain current throughout the paramedic program and the certification process
- Current EMT or EMT-Intermediate certification. This certification **MUST** remain current throughout the paramedic program and certificate process (a lapse in certification will result in immediate expulsion from the program) and be either: National Registry certification; or State of Arizona certification
- Documentation of being 18 years old.
- Reading assessment at the 9th grade level.
- Current health insurance coverage. This coverage must remain current throughout the course of training and the certification process.
- Negative results of a 5 panel drug screening within 6 months of the course start date. Screening must include:
  - a. Marijuana
  - b. Cocaine
  - c. Barbiturates
  - d. Sedatives
  - e. Amphetamines
- Provide proof of immunity or immunization for the following:
- Proof of negative TB test or chest X-ray within 6 months prior to application as defined in R9-25-308 (D) and proof of annual TB testing while enrolled in the program.
- Measles (Rubeola)/Mumps/Rubella.
- Tetanus/Diphtheria within the last 10 years.
- Results of serological testing showing Hepatitis B (HBV) immunization, begin HBV vaccination series, or sign the release of liability claims/declination form.
- Flu Shot (this needs to be obtained during flu season, see program staff for dates)
- Successfully Screen for the following areas:
  - ALS written exam
  - Oral Board screening
  - Practicals screening

### What can I do with this degree?

**Career Options:** Paramedic

**Academic Options:** See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Locations:** Community Campus

**Department/Contact Information:**

Dean: 520-206-6569

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	6
Analysis and Critical Thinking Requirement . . . . .	6
Humanities and Social Science Requirement . . . . .	6
Computer and Information Literacy Requirement . . . . .	1-3
<b>Subtotal . . . . .</b>	<b>19-21*</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
All of the core courses require acceptance into the Paramedic Program.		
EMT 140	Pre-Hospital Trauma Life Support .....	1.5
EMT 155	Advanced Medical Life Support .....	1.5
EMT 158	Transition Training for EMT .....	1.5
EMT 170	ALS Operations .....	1
EMT 205	ALS Pharmacology and Medication Administration .....	3
EMT 214	ALS Advanced Special Considerations .....	2.5
EMT 218	Paramedic National Registry Preparatory Course .....	3.5
EMT 219	ALS Foundations .....	1.5
EMT 221	ALS Airway and Ventilation .....	1.5
EMT 222	ALS Patient Assessment and Assessment Based Management .....	1.5
EMT 223	ALS Trauma Emergencies and Systems .....	2
EMT 224	ALS Medical Emergencies .....	4
EMT 225	ALS Special Medical Considerations .....	2
EMT 227LC	ALS Practicum: Clinical Lab .....	3
EMT 228LC	ALS Practicum: Vehicular Lab .....	3
EMT 230	Basic ECG Interpretation .....	1.5
EMT 242*	ALS Advanced Foundations .....	2
EMT 244*	ALS Advanced Medical Emergencies .....	2.5
EMT 247LC*	ALS Advanced Practicum: Clinical Lab .....	3
EMT 248LC*	ALS Advanced Practicum: Vehicular Lab .....	3
EMT 250	Advanced Cardiac Care .....	1.5
EMT 252	Pediatric Advanced Life Support .....	1.5
EMT 254*	Advanced ECG Interpretation .....	3
EMT 258	Pediatric Education for Pre-Hospital Professionals .....	1.5
EMT 263	Tox-Medic .....	1.5
EMT 295	ALS Independent Research .....	3
<b>Subtotal</b> .....		<b>57</b>
<b>Total credits as displayed</b> .....		<b>76-78§</b>

¥ General Education requires 19-21 hours. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

§ This degree may be completed with less than the credits displayed as long as the course requirements are fulfilled with a minimum of 60 credits.

# Engineering

## Pre-Engineering—Concentration—Science—Associate of Science Degree for Transfer

Prepare to transfer to a university to complete a bachelor's degree in engineering.

### What can I do with this degree?

**Academic Options:** Transfer to a college or university to complete a bachelor's degree in Engineering.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-2180

Lead Faculty: 520-206-6679

Program/Major/Concentration Codes: **AOSSCIENCE/ASI/ENGR**

### Arizona General Education Curriculum Requirements (AGEC-S) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences .....	†
The combination of CHM 151IN & 152IN or PHY 210IN & 216IN fulfill this requirement.	
Mathematics.....	†
MAT 220 fulfills this requirement.	
Social and Behavioral Sciences .....	6
Other Requirement Options.....	†
MAT 231 and MAT 241 fulfill this requirement	
AGEC Special RequirementsThe I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>18 ¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses: A grade of C or better is required in all courses for graduation.</b>		
CHM 151IN*	General Chemistry I SUN# CHM 1151 .....	5
ENG 102IN*	Problem-Solving and Engineering Design SUN# EGR 1102 .....	3
MAT 220*	Calculus I SUN# MAT 2220 .....	5
MAT 231*	Calculus II SUN# MAT 2230.....	4
MAT 241*	Calculus III SUN# MAT 2241 .....	4
PHY 210IN*	Introductory Mechanics SUN# PHY 1121 .....	5
CHM 152IN or PHY 216IN**.....		5
Engineering Electives** .....		11-15
Select transfer courses from university requirements for the specific branch of Engineering that you plan to pursue. Consult with Department faculty or use one of the university web sites below for assistance in selecting appropriate courses from the subjects below: BIO, CHM, CIS, ENG, GLG, MAT, or PHY		
<b>Subtotal .....</b>		<b>42-46</b>
<b>Total credits as displayed .....</b>		<b>60-64</b>

† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Only courses included in the university's specific Engineering major requirements meet Engineering electives – see ASU: <https://engineering.asu.edu/advising/>; NAU: <https://nau.edu/cefn/engineering/>; UA: <http://www.advising.arizona.edu> or <http://engineering.arizona.edu> or see the UA's Degree Search for specific course information: <http://degreesearch.arizona.edu> Some of the UA Engineering degrees require concurrent enrollment in the 3rd and 4th semesters.

# Ethnic, Gender, and Transborder Studies Concentration

## Liberal Arts - Associate of Arts for Transfer Ethnic, Gender, and Transborder Studies Concentration

The Ethnic, Gender, and Transborder Studies (EGTS) Concentration offers an interdisciplinary study of the histories, cultures, socio-economic concerns, politics, and identities of people of color and people of multiple genders and sexualities on their own terms. It explores the stories, social movements, diasporas, and achievements of historically marginalized peoples in the United States while attending to transborder and global perspectives. The Concentration offers courses in American Indian Studies, Gender and Women's Studies (including LGBTQ), Global Studies, and Mexican American Studies. These areas of study encourage students to learn current theories about the intersectionality and social construction of ethnicity, race, class, gender, and sexuality while scrutinizing traditional assumptions in order to better understand themselves and their society and to make enlightened choices. The EGTS Concentration prepares students to become agents of change in their communities, in institutions, and in the world on behalf of social justice.

Students should meet with a social sciences faculty member, an advisor, or a counselor to plan their course of study using the appropriate major guide.

### What can I do with my studies in Ethnic, Gender, and Transborder Studies?

**Career options:** After completing a bachelor's degree, seek employment in a variety of fields including teaching, research, journalism, law, government, or business.

**Academic options:** Continue studies toward a bachelor of arts in Ethnic studies, Gender and Women's studies, or the other related social sciences. All courses in Pima's concentration are not required at all transfer universities, but provide a good lower division preparation for social and behavioral science majors.

**Locations:** All Campuses

**Department/Contact Information:**

Dean: 520-206-7666

Program/Major/Concentration Codes: **AOALIBRALART/ALA/EGTS**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts .....	6
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	6
Other Requirements .....	†
Second Language courses fulfill this requirement	
Special Requirements	
Second Language course numbered 202 fulfills the G requirements (or the C requirement if the language is ASL). The I and either the C or G requirement should be fulfilled by selecting appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>29</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses – A grade of C or better is required for graduation.

#### Select 5 transferable courses from the following prefixes:

AIS**, GLS**, GWS**, MAS** .....	15
<b>Subtotal .....</b>	<b>15</b>

**Required Support Courses-A grade of C or better is required for graduation.**

Second Language Requirement .....	16
Completion of a language course numbered 202, fourth semester level. (Bilingual or International students should consult an advisor or counselor concerning exceptions to this requirement.) If a student satisfies the language requirement in fewer than 16 credits, additional credit hours of transferable electives must be completed to meet the minimum Associate degree requirement of 60 credit hours.	
<b>Subtotal .....</b>	<b>16</b>
<b>Total Credits as displayed.....</b>	<b>60</b>

† Core or support course(s) fulfill this requirement.

‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\*\* Courses cross listed with AIS, GLS, GWS, and MAS prefixes may also be applied to meet required core coursework.

NOTE: Some core courses may also fulfill AGEC category requirements. If you complete a core course which "double-dips" to also meet general education requirements, you will need to complete additional transfer courses to meet the minimum 60 credits required for an associate's degree.

# Fashion Design

Prepare for an exciting career in Fashion Design. Complete this program by taking classes in the Fashion Design and Clothing Department at Pima's West Campus.

## Fashion Design — Certificate for Direct Employment

Prepare for entry-level careers in fashion design for the apparel industry by studying fashion drawing, imaginative design, historical costumes, sewing applications, textiles, and pattern drafting.

### What can I do with this certificate?

**Career Options:** Seek entry level positions with apparel manufacturers, clothing retailers, tailoring or alteration businesses, speciality clothing shops, or start your own business.

**Academic Options:** Continue your studies by taking courses toward the AAA in Applied Arts.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-3028

Program/Major Codes: **CRTFDC/FDC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
FDC 110	Clothing Construction I .....	3
FDC 111*	Clothing Construction II .....	3
FDC 112*	Pattern Fitting.....	3
FDC 121	Flat Pattern Making.....	3
FDC 122	History of Clothing .....	3
FDC 126	Textiles .....	3
FDC 141	Introduction to Fashion Design .....	3
FDC 144*	Fashion Drawing .....	3
FDC 211*	Clothing Construction III .....	3
<b>Total credits as displayed .....</b>		<b>27</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# Fire Science

## Fire Science Academy Track — Certificate for Direct Employment

Gain firefighting, hazardous materials and wildland firefighting skills. This program meets Arizona certification requirements for Firefighter I and II, and will enable students to achieve International Fire Service Accreditation Congress (IFSAC) certification as a Hazmat First Responder. In addition, students will be awarded a certificate of completion for wildland firefighting training from the National Wildfire Coordinating Group. Complete this program by taking classes in a combination of evenings and weekends.

**Before enrolling in this program,** you must fulfill meet certain requirements.

- Students must provide documented certification from the State of Arizona or National Registry of Emergency Medical Technicians stating that they have obtained a minimum of EMT certification. An option that earns students college credit is completing EMT 100 at Pima Community College.
- Attend a program orientation.

### What can I do with this certificate?

**Career Options:** Students will be eligible to take the State of Arizona Certification Test to become a certified firefighter and/or work as a wildland firefighter.

**Academic Options:** Continue your studies by taking classes toward an Associate of Applied Science in Fire Science.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-26/43.0203-Gedt.html>

**Location:** Community Campus

**Department/Contact Information:**

Dean/Lead Faculty: 520-206-3583

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
FSC 101	Principles of Emergency Services (FESHE Core) .....	3
FSC 110	Rope I .....	1
FSC 127	Principles of Emergency Services Safety and Survival (FESHE Core) .....	3
FSC 130	Strength and Fitness for the Fire Service .....	2.5
FSC 149	Fire Operations I .....	4
FSC 150*	Fire Operations II .....	4
FSC 153	Hazardous Materials .....	1.5
FSC 160	Wildland Firefighting .....	3
FSC 173*	Records and Reports .....	.025 - 1
<b>Total credits as displayed .....</b>		<b>.22.25 - 23</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Fire and Emergency Services Higher Education (FESHE) — Associate of Applied Science Degree for Direct Employment

Prepare for the day-to-day demands of the profession and learn to cope with challenges in the field. This degree prepares students to move toward managerial and command positions. Complete this program by taking classes in a combination of weekdays, evenings and weekends.

**Before enrolling in this program**, you must fulfill meet certain requirements.

- Students must provide documented certification from the State of Arizona or National Registry of Emergency Medical Technicians stating that they have obtained a minimum of EMT certification. An option that earns students college credit is completing EMT 100 at Pima Community College.
- Attend a program orientation.

### What can I do with this degree?

**Career Options:** Seek employment or increase promotional opportunities in the fire service.

**Academic Options:** This program provides students the opportunity to transfer to a bachelor’s program. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Community Campus/29th Street Coalition Center

**Department/Contact Information:**  
Dean/Lead Faculty: 520-206-3583

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 and 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
MGT/STU 230 fulfills 3 credits in the Leadership/Ethics category. Complete a course from the Humanities/Fine Arts or Social Science category.	
Computer and Information Literacy Requirement .....	†
CSA 100 fulfills this requirement.	
Special Requirement	
STU 230 fulfills this requirement.	
<b>Subtotal</b> .....	<b>9</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

FSC 101	Principles of Emergency Services (FESHE Core) .....	3
FSC 120	Fire Behavior and Combustion (FESHE Core).....	3
FSC 123*	Building Construction Related to the Fire Service (FESHE Core).....	3
FSC 124*	Fire Prevention (FESHE Core) .....	3
FSC 126*	Fire Protection Systems in the Fire Service (FESHE Core).....	3
FSC 127	Principles of Emergency Services Safety and Survival (FESHE Core).....	3

**Fire Science Electives - Complete 24 credits from any of the following Fire Science courses:**

FSC 110	Rope I	
FSC 111	Rope II	
FSC 112*	Rope III	
FSC 118*	Swift Water Rescue for First Responders	
FSC 125	Hydraulics and Water Supply (FESHE Non-Core)	
FSC 130	Strength and Fitness for Fire Science	
FSC 149	Fire Operations I	
FSC 150*	Fire Operations II	
FSC 153	Hazardous Materials	
FSC 154*	Advanced Fire Prevention	
FSC 160	Wildland Firefighting	
FSC 163*	Fire Apparatus and Equipment	
FSC 168*	Special Hazard Tactical Problems	
FSC 170*	Fire Science Leadership	
or FSC 170A*	Fire Science Leadership I	
and FSC 170B*	Fire Science Leadership II	
and FSC 170C*	Fire Science Leadership III	
FSC 173*	Records and Reports	
FSC 174*	Fire Investigation I (FESHE Non-Core)	
FSC 180*	Driver Training for Fire Science	
FSC 189*	Current Issues in Fire Science	
FSC 230*	Fire Investigation II (FESHE Non-Core)	
FSC 249*	Occupational Safety and Health for Emergency Services (FESHE Non-Core)	
FSC 250*	Principles of Fire and Emergency Service Administration (FESHE Non-Core)	
FSC 252*	Fire Service Strategy and Tactics (FESHE Non-Core)	
FSC 253*	Legal Aspects of Emergency Services (FESHE Non-Core)	
FSC 260*	Fire and Emergency Services Instructor	
FSC 270*	Leadership I for Fire Services Executives	
FSC 271*	Leadership II for Fire Services Executives	
FSC 272*	Leadership III for Fire Services Executives	
FSC 273*	Leadership IV for Fire Services Executives	
FSC 274*	Leadership V for Fire Services Executives	
FSC 280	Fire Chief Preparation	
<b>Subtotal</b>		<b>42</b>

**Required Support Courses**

MGT/STU 230	Dynamics of Leadership	3
WRT 101*	English Composition I SUN# ENG 1101	3
WRT 102*	English Composition II SUN# ENG 1102	3
CSA 100	Computer Literacy	1
<b>Subtotal</b>		<b>10</b>
<b>Total credits as displayed</b>		<b>61</b>

† Core or support course(s) fulfill this requirement.  
 ‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Fitness and Sport Sciences

Learn to coach athletes, teach physical education or train individuals in personal fitness.

## Fitness and Sport Sciences — Coaching Certificate for Direct Employment

Learn effective coaching techniques applicable to all sports.

### What can I do with this certificate?

**Career Options:** Seek certification from the Arizona Department of Education, the National Federation of Interscholastic Coaches Association or the American Sport Education Program. Coach a high school-level sports team.

**Academic Options:** Pursue a Fitness Professional Certificate. A student planning to transfer to obtain a bachelor’s degree in Exercise Science should follow the Associate of Science Degree for Transfer.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-14/13.1314-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

Lead Faculty: 520-206-6996

Program/Major Codes: **CRTCOACHING/FSG**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
EDC 240*	Adolescent Development .....	3
FSS 238*	Introduction to Sports Injury Management .....	3
FSS 271*	Sport Psychology .....	3
FSS 272*	Coaching Techniques and Practices .....	3
or FSS 285*	Principles of Athletic Coaching	
Physiology	Select one of the following: FSS 234*, FSS 234A* & FSS 234B*, FSS 273*, BIO 160IN, BIO 201IN*, or BIO 202IN* .....	3-4
<b>Total credits as displayed .....</b>		<b>15-16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

**Information:** To become certified by the Arizona State Department of Education to be a Head Coach in an Arizona high school without a teaching certificate you will have to apply to the state and submit your transcripts after you complete the Coaching Certificate. There are additional requirements such as having current CPR certification, documented coaching experiences and fingerprinting. For more information, please see [www.azed.gov/educator-certification](http://www.azed.gov/educator-certification).

## Fitness Professional — Certificate for Direct Employment

Learn exercise and fitness theories and the skills to teach people how to safely exercise. The program may include work-related experiences at the Fitness and Conditioning Center and in local fitness clubs and agencies.

### What can I do with this degree?

**Career Options:** Work as a personal trainer and/or group fitness instructor in your own business or within a fitness club or agency. Take exams for certification through the American College of Sports Medicine (ACSM), the American Council of Exercise (ACE), or the National Strength and Conditioning Association (NSCA).

**Academic Options:** Pursue a Coaching Certificate. A student planning to transfer to obtain a bachelor’s degree in Exercise Science should follow the Associate of Science Degree for Transfer.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-24/31.0501-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

Lead Faculty: 520-206-6685

Program/Major Codes: **CRTFITNESS/FSP**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
FSS 208*	Professional Activities: Group Fitness .....	2
FSS 218*	Professional Activities: Weight Training .....	2
FSS 234*	Fundamentals of Exercise Science .....	4
	or FSS 234A* & 234B*	
FSS 236*	Communication and Exercise Adherence .....	2
FSN 154	Nutrition .....	3
	or FSS 241*	
FSS 276*	Personal Trainer: Muscular Strength, Endurance, Flexibility .....	3
FSS 277*	Personal Trainer: Cardiovascular Endurance/Body Composition .....	3
FSS 281*	Personal Trainer Exam Preparation .....	1
<b>Subtotal</b> .....		<b>20</b>

**Required Support/Elective Courses**

Select 6 credits from the following list:

FAW 182	Healthy Living and Wellness	
FAW 183	Lifestyle Wellness Coaching	
FAW 184	Healthy, Wellness, and Physical Activity	
FSS 238*	Introduction to Sports Injury Management	
FSS 260*	Business Practices for the Personal Trainer	
FSS 262*	Personal Trainer: Special Populations	
FSS 271*	Sport Psychology	
FSS 273*	Sport Physiology	
FSS 280*	Lifestyle and Weight Management Consultant	
FSS 291*	Fitness and Sport Sciences Internship	
<b>Subtotal</b> .....		<b>6</b>
<b>Total credits as displayed</b> .....		<b>26</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Fitness and Wellness Specialist — Certificate for Direct Employment

The Fitness and Wellness Specialist Certificate program is designed to educate students in the science and principles supporting the growing field of wellness. Students will acquire the knowledge needed to work as a professional in the wellness field and develop the skills for positive behavioral change. Students who complete this certificate and wish to practice in the profession will be prepared to sit for a national certification exam. Those who are taking the program specifically for personal development will be able to safely and effectively make healthier lifestyle choices.

**Before enrolling in this program**, students are encouraged to have successfully completed or be concurrently enrolled in ICS 081 or MAT 086, and REA 112, and WRT 101.

Certification testing requires an additional fee to the American Council of Exercise (ACE). Students must be 18 years or older to apply for the certification exam, and possess proof of CPR/AED certification at time of testing.

**What can I do with this degree?**

**Career Options:** Work as a personal trainers, group exercise leaders, health club sales or management professionals, community health leaders, corporate wellness programs, recreation workers/leaders, and many other health and wellness related professions. Additional options include pursuing further studies toward exercise science, physical therapy, strength and conditioning, or athletic training. Students may be required to show proof of CPR/AED certificate upon future employment. Suggested national certification exam after completion of program through American Council of Exercise (ACE) Health Coach, which is accredited by the National Commission for Certifying Agencies (NCCA).

**Academic Options:** A student planning to transfer to obtain a bachelor’s degree in Exercise Science, Exercise and Wellness, Health Education and Health Promotion should follow the Associate of Science Degree for Transfer.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

Lead Faculty: 520-206-6685

Program/Major Codes: **CRTFWS/FWS**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
FAW 182	Healthy Living and Wellness	3
FAW 183	Lifestyle Wellness Coaching	2
FAW 184	Health, Wellness, and Physical Activity	3
FSN 154	Nutrition	3
or FSS 241*	Nutrition for Exercise and Sport	
FSS 234*	Fundamentals of Exercise Science	3-4
or FSS 234A* & 234B*		
or FSS 273*	Sport Physiology	
<b>Subtotal</b>		<b>14-15</b>
<b>Required Support/Elective Courses</b>		
Select 7 or more credits from the following list:		
FAW** Activity Classes (Choose up to 3 FAW group fitness classes)		
FSS 280*	Lifestyle and Weight Management Consultant	
FSS 291*	Fitness and Sports Sciences Internship	
PSY 218*	Health Psychology	
WED 110	Introduction to Complementary and Alternative Medicine	
WED 111	Self-Care for Personal Wellness	
<b>Subtotal</b>		<b>7</b>
<b>Total credits as displayed</b>		<b>21-22</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Only one (1) credit fitness classes allowed and cannot be repeated.

**Physical Education, Exercise and Wellness, Athletic Trainer**

A student planning to transfer to obtain a bachelor’s degree in Physical Education, Exercise and Wellness, or Athletic Trainer should follow the **Associate of Arts Degree for Transfer in Liberal Arts**. A student planning to transfer to obtain a bachelor’s degree in Exercise Science should follow the **Associate of Science Degree for Transfer**. A student should meet with Fitness and Sport Science faculty or an advisor to plan courses. Students who plan to transfer should contact an advisor from their chosen school and/or use a transfer guide for verification of transfer courses.



# General Studies

## General Studies — Associate of General Studies Degree

This degree allows students to uniquely design an associate's degree in collaboration with a faculty member, advisor or counselor. Courses may be chosen from a variety of subject areas. Students should meet with an advisor or counselor before beginning this degree. Engineering students who plan to transfer to a university should follow courses outlined in the engineering concentration.

### *What can I do with this degree?*

**Career Options:** Select courses to fit careers of your choice.

**Academic Options:** Continue taking classes toward a transfer degree.

**Locations:** All campuses

Program/Major Codes: **AGSGENRSTUDY/AGS**

### **General Education Requirements - A grade of C or better is required for graduation.**

*Course lists for each General Education category listed below can be found starting on page 74.*

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>19-21</b>

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
Electives .....		39-41
Complete courses numbered 100 or higher. See an advisor to develop an education plan.		
<b>Subtotal .....</b>		<b>39-41</b>
<b>Total credits as displayed .....</b>		<b>60</b>

# Health Information Management

## Health Information Technology — Associate of Applied Science for Direct Employment

Prepare for entry-level employment or advancement within the growing health-care industry as a professionally trained Health Information Technician. Health Information Technician professionals work behind the scenes to support patient care in clinics, hospitals, physician and specialty practices and in external agencies including legal firms and research centers.

### What can I do with this degree?

**Career Options:** Find entry-level employment as a medical coder, medical billing and insurance claims specialist, or physician or hospital coder.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-7186

Program/Major Codes: **AASOAH/OAH**

Course Number	Course Title	Credit Hours
<b>General Education Requirements - A grade of C or better is required for graduation.</b>		
<i>Course lists for each General Education category listed below can be found starting on page 74.</i>		
Communication Requirement	.....	†
WRT 101 and 102 fulfill this requirement.		
Analysis and Critical Thinking Requirement	.....	2
BIO 160IN fulfills 4 credits of this requirement. Complete another course from the Math, Science, or Critical Thinking category. The math competency must be met.		
Humanities and Social Science Requirement	.....	6
Computer and Information Literacy Requirement	.....	†
CSA 100 fulfills this requirement.		
Special Requirement	The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b>	.....	<b>8¥</b>

### Required Core Courses - A grade of C or better is required for graduation.

HIT 100	Introduction to Health Information Management	3
HIT 101*	Introduction to ICD Coding	3
HIT 102*	CPT Coding	3
HIT 105	Medical Terminology	3
HIT 108	Health Information Employment Policies	1
HIT 112*	Health Insurance and Medical Billing	3
HIT 125	Pathophysiology and Pharmacology for Health Information Technology	3
HIT 150	Introduction to Health Management Information Systems	3
HIT 175	Health Information Statistics and Research	3
HIT 201*	Advanced ICD Coding	3
HIT 202*	Advanced Classification Systems Applications	3
HIT 210*	Medical Quality Assurance and Supervision	3
HIT 211*	Medicolegal Aspects in Health Information Management	3
HIT 225*	Advanced Health Management Information Systems	3
HIT 290*	Health Information Technology Internship	4.5
<b>Subtotal</b>	.....	<b>44.5</b>

**Required Support Courses - A grade of C or better is required for graduation.**

BIO 160IN	Introduction to Human Anatomy and Physiology .....	4
CIS 120*	Applications for Business SUN# CIS 1120 .....	4
CSA 100*	Computer Literacy .....	1
WRT 101*	English Composition I .....	3
WRT 102*	English Composition II .....	3
<b>Subtotal</b> .....		<b>15</b>
<b>Total credits as displayed</b> .....		<b>67.5</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Health Information Technology — Certificate for Direct Employment

Become a Health Information Technician, specializing in medical billing and insurance, coding, front office support, or health information management.

### What can I do with this certificate?

**Career Options:** Become a coder, insurance or medical records technician, or professional in a medical facility or health care or insurance agency.

**Academic Options:** Continue your studies by taking additional courses toward the Health Information Technology concentration of the Office and Administrative Professions degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-65/52.0401-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7186

Program/Major/Concentration Codes: **CRTOAH/OAM/\*\*\*\*** (see concentration codes below)

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

BIO 160IN*	Introduction to Human Anatomy and Physiology .....	4
HIT 100	Introduction to Health Information Management .....	3
HIT 105	Medical Terminology .....	3
HIT 108	Health Information Employment Policies .....	1
HIT 125	Pathophysiology and Pharmacology for Health Information Technology .....	3
<b>Subtotal</b> .....		<b>14</b>

**Core Concentrations - A grade of C or better is required for graduation.**

Complete one of the following concentrations .....

**Medical Billing and Coding** (Concentration Code: OAHB)

HIT 101*	Introduction to ICD Coding .....	3
HIT 102*	CPT Coding .....	3
HIT 112*	Health Insurance and Medical Billing .....	3
HIT 202*	Advanced Classification Systems Applications .....	3
or HIT 290*	Advanced Health Information Technology Internship .....	3

**Subtotal** .....

**Health Information Management** (Concentration Code: OAHM)

HIT 150	Introduction to Health Management Information Systems .....	3
HIT 175	Health Information Statistics and Research .....	3
HIT 210*	Medical Quality Assurance and Supervision .....	3
HIT 225* or HIT 290*	Health Management Information Systems .....	3
	Health Information Technology Internship .....	
<b>Subtotal</b> .....		<b>12</b>
<b>Total credits as displayed</b> .....		<b>26</b>

\*This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Health Information Management Future Enrollment Programs

These programs have been submitted to the U.S. Department of Education for approval for Title IV Federal Financial Aid. At the time this catalog was submitted for publication, they had not yet been approved.

Students are not currently being admitted to these programs.

- Please check the online program displays for changes to the enrollment and financial aid status.

## Health Information Management — Certificate for Direct Employment

Prepare for entry-level employment or advancement within the growing field of health information technology as a health information technician.

### What can I do with this certificate?

**Career Options:** Work as an entry-level scheduler or as a Health Information Technician within the Healthcare Industry.

**Academic Options:** Continue your studies by taking additional courses toward the Health Information Technology Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-7186

Program/Major/Concentration Codes: **CRTHIM/HIM**

Course Number	Course Title	Credit Hours
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### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 fulfills this requirement.	
Analysis and Critical Thinking Requirement .....	†
BIO 160IN fulfills this requirement.	
<b>Subtotal</b> .....	<b>†</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS 120*	Computer Applications for Business SUN# CIS 1120	4
HIT 100	Introduction to Health Information Management	3
HIT 105	Medical Terminology	3
HIT 108	Health Information Employment Policies	1
HIT 125	Pathophysiology and Pharmacology for Health Information Technology	3
HIT 150	Introduction to Health Management Systems	3
HIT 175	Health Information Statistics and Research	3
HIT 210*	Medical Quality Assurance and Supervision	3
HIT 225*	Advanced Health Management Information Systems	3
HIT 290*	Health Information Technology Internship	4.5
<b>Subtotal</b>		<b>30.5</b>
<b>Required Support Courses - A grade of C or better is required for graduation.</b>		
BIO 160IN*	Introduction to Human Anatomy and Physiology	4
WRT 101*	English Composition I SUN # ENG 1101	3
<b>Subtotal</b>		<b>7</b>
<b>Total credits as displayed</b>		<b>37.5</b>

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Medical Billing and Coding — Certificate for Direct Employment

Prepare for entry-level employment or advancement within the growing health-care industry with a focus on medical coding and billing.

### What can I do with this certificate?

**Career Options:** Work as an entry-level biller or coder in the field of health information technology, such as Coding or Billing Departments within hospitals or small physician practices In the Healthcare Industry.

**Academic Options:** Continue your studies by taking additional courses toward the Health Information Technology Associate of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-7186

Program/Major/Concentration Codes: **CRTMBC/MBC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BIO 160IN	Introduction to Human Anatomy and Physiology	4
CSA 100	Computer Literacy	1
HIT 100	Introduction to Health Information Management	3
HIT 101*	Introduction to ICD Coding	3
HIT 102*	CPT Coding	3
HIT 105	Medical Terminology	3
HIT 108	Health Information Employment Policies	1
HIT 112*	Health Insurance and Medical Billing	3
HIT 125*	Pathophysiology and Pharmacology for HIT	3
HIT 201*	Advanced ICD Coding	3-4.5
or HIT 290*	Health Information Technology Internship	
<b>Total credits as displayed</b>		<b>27-28.5</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# History

## History Concentration — Liberal Arts – Associate of Arts for Transfer

Study the origins and development of society by taking courses that focus on the history of regions, countries and peoples from pre-historic times to the present.

### What can I do with my studies in history?

**Career options:** After completing a bachelor’s degree, seek employment in a variety of fields including teaching, research, journalism, law, government, or business. For additional information see: <http://www.historians.org/jobs-and-professional-development/career-resources/careers-for-history-majors>.

**Academic options:** Continue studies toward a bachelor of arts in history, education, or the other social sciences. All courses in Pima’s concentration are not required at all transfer universities, but provide a good lower division preparation for history majors.

**Locations:** All Campuses

Program/Major/Concentration Codes: **AOALIBRALART/ALA/ALAH**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 55.

English Composition .....	6
Humanities and Fine Arts.....	3
HIS 101 fulfills 3 credits in the Humanities category. Complete a course from the Fine Arts category.	
Biological and Physical Sciences .....	8
Mathematics.....	3
Social and Behavioral Sciences .....	3
HIS 141 fulfills 3 credits of this requirement. Complete a non-HIS course from this category.	
Other Requirements .....	†
Second Language courses fulfill this requirement	
Special Requirements	
HIS 101 and 141 fulfill this requirement.	
<b>Subtotal .....</b>	<b>23‡</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses – A grade of C or better is required for graduation.

HIS 101	Introduction to Western Civilization I .....	3
or HIS 101 HC	Introduction to Western Civilization I: Honors	
HIS 102	Introduction to Western Civilization II .....	3
or HIS 102 HC	Introduction to Western Civilization II: Honors	
HIS 141	United States History I SUN# HIS 1131 .....	3
or HIS 141HC	United States History I: Honors	
HIS 142	United States History II SUN# HIS 1132.....	3
HIS 160	Latin America Before Independence .....	3
<b>Subtotal .....</b>		<b>15</b>

### Required Support Courses-A grade of C or better is required for graduation.

Second Language Requirement .....	16
Completion of a language course numbered 202, fourth semester level. (Bilingual or International students should consult an advisor or counselor concerning exceptions to this requirement.) If a student satisfies the language requirement in fewer than 16 credits, additional credit hours of transferable electives must be completed to meet the minimum Associate degree requirement of 60 credit hours.	
Transfer Electives	
Select 6 transferable credits.....	6
<b>Subtotal .....</b>	<b>22</b>
<b>Total credits as displayed .....</b>	<b>60</b>

† Core or support course(s) fulfill this requirement.

‡ AGECE requires 35 credits. This subtotal shows the AGECE credits not fulfilled by core, support, or second language courses.



# Honors

## Honors Program — Certificate

The Honors Program offers academically excellent students a variety of enrichment opportunities to assist them in attaining their full academic potential.

**Before enrolling in this program,** students must meet certain requirements:

- A. Incoming freshmen, with less than 12 college credits, must have maintained a GPA of at least 3.5 at an accredited high school, and scored 90 or higher on both the reading and writing portions of the College assessment tests.
- OR
- B. Continuing students must have completed at least 12 college credits in courses numbered 100 or higher, with a GPA of 3.5 or better.
- Complete HON 101: Honors Colloquium with a grade of B or better.

**Special Admissions Program: You are not fully admitted to this program until you have fulfilled the requirements listed above.** See the website or an advisor for details.

### Required Courses:

To earn this certificate, students must complete a minimum of 15 credits of Honors coursework with an overall 3.5 GPA.

Course Number	Course Title	Credit Hours
<b>Required Core Course - A grade of B or better is required for graduation.</b>		
HON 101	Honors Colloquium .....	3
<b>Subtotal .....</b>		<b>3</b>
<b>Required Support Courses - A grade of B or better is required for graduation.</b>		
Electives - Select a minimum of 12 credits from the following:		
HON 210*	College Honors Advisory Council .....	1
HON 244*	Honors Field Excursions .....	1-3
HON 296*	Honors Independent Study Project .....	1-3
WRT 101HC*	English Composition I: Honors .....	3
WRT 102HC*	English Composition II: Honors .....	3
Honors Courses in any Prefix ** .....		3-12
Honors Contracts in regular courses *** .....		3-12
<b>Subtotal .....</b>		<b>12</b>
<b>Total credits as displayed .....</b>		<b>15</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* See the class schedule for current offerings.

\*\*\* To start an Honors Contract you must have completed HON 101. Meet with an Honors Coordinator at any campus or contact us at <http://www.pima.edu/programs-courses/honors-contact-us.html>

# Hotel and Restaurant Management

Learn basic principles of hotel and restaurant management.

## Hotel and Restaurant Management — Certificate for Direct Employment

Work in the resort/hotel or restaurant industry while completing an entry-level, career-track certificate that provides an introduction to hotel/restaurant management. Earn credit for co-op work experience.

### What can I do with this degree?

**Career Options:** Entry-level employment in hotel or restaurant management

**Academic Options:** Courses can apply to an Associates Degree or to the HRM baccalaureate degree at Northern Arizona University. This program does not transfer to Arizona State University or The University of Arizona.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-68/52.0901-Gedt.html>

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-2176

Program/Major Codes: **CRTHRM/HRC**

Course Number	Course Title	Credit Hours
<b>Required Core Course - A grade of C or better is required for graduation.</b>		
CSA 110	Spreadsheets: Microsoft Excel .....	3
HRM 100	Introduction to Hospitality Industry .....	3
HRM 104	Hotel Food and Beverage Management .....	3
HRM 199/199WK*	Introductory Co-op/Introductory Co-op Work: Hotel and Restaurant Management .....	3
or		
HRM 299/299WK*	Advanced Co-op/Advanced Co-op Work: Hotel and Restaurant Management .....	3
<b>Subtotal</b> .....		<b>12</b>
<b>Required Support Courses</b>		
Hospitality Electives .....		9
Complete three courses from the list below:		
HRM 101	Front Office Procedures	
HRM 110	Food Service Systems Management	
HRM 111*	Commercial Food	
HRM 150	Hospitality Property Management	
HRM 210*	Managing Customer Service for the Hospitality Industry	
<b>Subtotal</b> .....		<b>9</b>
<b>Total credits as displayed</b> .....		<b>21</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Hotel and Restaurant Management — Associate of Arts Degree for Transfer

Learn basic principles of hotel and restaurant management while completing lower-division required courses for a bachelor's degree in Hotel-Restaurant Management.

### What can I do with this degree?

**Career Options:** Entry-level employment in hotel or restaurant management

**Academic Options:** Complete a bachelor's degree in Hotel and Restaurant Management in Tucson through a partnership with NAU. Completion of required program courses, including AGECE-A requirements, allows students to waive 12 upper-division liberal studies courses upon transfer to NAU.

Students can complete a bachelor's degree in Hotel and Restaurant Management through NAU in Tucson.

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-2299

Program/Major Codes: **AOAHSPITALITY/HRM**

Course Number	Course Title	Credit Hours
<b>Arizona General Education Curriculum Requirements (AGECE-A) - A grade of C or better is required for graduation.</b>		
<i>Course lists for each General Education category listed below can be found starting on page 74.</i>		
	English Composition .....	6
	Humanities and Fine Arts .....	6
	Biological and Physical Sciences .....	8
	Mathematics .....	3
	Social and Behavioral Sciences .....	3
	ECN 150 fulfills 3 credits of this requirement. Complete a non-ECN course from this category.	
	Other Requirements .....	†
	Second language support courses fulfill this requirement.	
	Special Requirements	
	The I, C, and G requirements should be fulfilled by courses in the above categories.	
<b>Subtotal</b> .....		<b>26¥</b>
<b>Required Core Courses - A grade of C or better is required.</b>		
HRM 100	Introduction to Hospitality Industry .....	3
HRM 101	Front Office Procedures .....	3
HRM 150	Hospitality Property Management .....	3
<b>Subtotal</b> .....		<b>9</b>
<b>Required Support Courses</b>		
ACC 211*	Financial Accounting ( <i>was ACC 101</i> ) SUN# ACC 2201 .....	3
CIS 120*	Computer Applications for Business SUN# CIS 1120 .....	4
ECN 150	An Economic Perspective .....	3
HRM 110	Food Service Systems Management .....	3
HRM 111*	Commercial Food .....	3
	Second Language Requirement .....	8
	Completion of two semesters of a language course numbered 101 and 102*	
	Hospitality Elective .....	3
	Complete 3 credits of transferable electives.	
<b>Subtotal</b> .....		<b>27</b>
<b>Total credits as displayed</b> .....		<b>62</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

¥ AGECE requires 35 credits. This subtotal shows the AGECE credits not fulfilled by core, support, or second language courses.

# Human Resources

## Human Resources — Certificate for Direct Employment

Learn the principles and practices associated with a career in Human Resources.

### What can I do with this certificate?

**Career Options:** Move into basic human relations functions with a current employer. Find employment in human relations tasks.

**Academic Options:** Expand your business knowledge through other business programs.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-69/52.1001-Gedt.html>

**Location:** Community Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7216

Program/Major codes: **CRTHUMANRES/HRS**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
HRS 101	Introduction to Human Resources Management	3
HRS 102	Human Resource Law	3
HRS 103	Benefits and Compensation	3
HRS 104	Job Requirements, Recruitment, and Personnel Selection	3
HRS 105	Training and Development	3
HRS 106	Labor Relations	3
<b>Total credits as displayed</b>		<b>18</b>

# Law Enforcement

## Law Enforcement Academy — Certificate for Direct Employment

Learn the skills needed to begin a career in law enforcement while preparing for the licensure examination. Completion of the program exceeds the minimum P.O.S.T. requirements for entry-level employment as an Arizona peace officer.

### Before enrolling in this program you must meet certain requirements:

- High school diploma or GED
- At least 21 years of age upon completion of the academy
- No felony convictions
- U.S. Citizen
- Must possess a valid driver's license
- Physical requirement test
- Written evaluation
- Psychological evaluation
- Oral Board review
- Background investigation
- Medical evaluation
- Polygraph exam
- Other requirements that are specific to Arizona Peace Officer Standards and Training Board (Az P.O.S.T.)  
<https://post.az.gov/>

### What can I do with this certificate?

**Career Options:** After passing the licensure examination, seek entry-level employment as an Arizona police officer.

**Academic Options:** Continue your studies by working toward an associate's degree in Law Enforcement.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-25/43.0107-Gedt.html>

**Location:** Public Safety and Emergency Services Institute.

#### Department/Contact Information:

Director: 520-206-6484

Lead Faculty: 520-206-3963

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>General Education Requirements - A grade of C or better is required for graduation.</b>		
<i>Course lists for each General Education category listed below can be found starting on page 74.</i>		
	Communication Requirement .....	3
	Analysis and Critical Thinking Requirement .....	3
	<b>Subtotal</b> .....	<b>6</b>
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
LEA 110	Law Enforcement Academy Part I .....	24
LEA 210*	Law Enforcement Academy Part II .....	23
	<b>Subtotal</b> .....	<b>47</b>
	<b>Total credits as displayed</b> .....	<b>53</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Law Enforcement Academy — Associate of Applied Science for Direct Employment

Completion of the program meets and exceeds the minimum AZ P.O.S.T. requirements for entry-level employment as an Arizona peace officer.

### Before enrolling in this program you must meet certain requirements:

- High school diploma or GED
- At least 21 years of age upon completion of the academy
- No felony convictions
- U.S. Citizen
- Must possess a valid driver's license
- Physical requirement test
- Written evaluation
- Oral Board review
- Background investigation
- Medical evaluation
- Polygraph exam
- Other requirements that are specific to Arizona Peace Officer Standards and Training Board (Az P.O.S.T.)

### What can I do with this degree?

**Career options:** Work in law enforcement and public safety. This AAS provides law enforcement officer training.

**Academic Options:** Transfer to a Bachelor's of Applied Science degree in Criminal Justice at Northern Arizona University or Administration of Justice at University of Arizona South.

**Location:** Community Campus

**Department/Contact Information:**

Program Staff: 520-206-6350

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
AJS 225 fulfills 3 credits of this requirement. Complete a course from the Humanities/Fine Arts or the Leadership/Ethics category.	
Computer Information and Literacy Requirement .....	1-3
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>16-18</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

LEA 110	Law Enforcement Academy Part I .....	24
LEA 210*	Law Enforcement Academy Part II .....	23
<b>Subtotal .....</b>		<b>47</b>

### Required Support Courses

AJS 101	Introduction to Administration of Justice Systems .....	3
AJS 225	Criminology .....	3
<b>Subtotal .....</b>		<b>6</b>
<b>Total credits as displayed .....</b>		<b>69-71</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# Liberal Arts

## Liberal Arts - Associate of Arts Degree for Transfer

Prepare to transfer by completing your general education requirements for a wide variety of university majors. Engage in creative pursuits such as writing, art, history or languages.

Concentrations are available for American Sign Language & Interpretation Studies; Ethnic, Gender & Transgender Studies; Psychology; and History. Specialized AA degrees are available in: Administration of Justice, American Indian Studies, Anthropology, Elementary Education, Hotel and Restaurant Management, Political Science, Social Services, and Sociology.

Students, especially those transferring to the University of Arizona, are encouraged to enroll in STU 210, Transfer Strategies, to plan for the transfer process and success at the university.

Students who wish to transfer to an Arizona university and pursue a major in any of the following areas, should complete the PCC **Associate of Arts in Liberal Arts degree for transfer** (refer to university major guides for core or elective courses and language requirements).

- Biology (for ASU and NAU; for the UA complete the Associate of Science)
- Communication
- Creative Writing
- Digital Film Arts
- Education: Secondary or Special Education/Rehabilitation
- English
- Environmental Science
- Family Studies
- Journalism
- Languages
- Literature
- Mathematics
- Media Arts
- Mexican American Studies
- Physical Education, Exercise and Wellness, Athletic Trainer
- Pre-Agriculture
- Pre-Pharmacy
- Pre-Law
- Social Services: Substance Use Disorder Specialty or Youth Services Specialty
- Spanish
- Women's Studies

### What can I do with this degree?

**Academic Options:** Transfer to a university and major in subjects other than science, business or technology. Additional information on transferring to a university is available online (<http://www.pima.edu/transfer/transferringfrompima.shtml>) or from any advisor or counselor.

**Locations:** All campuses

**Contact Information:** Contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).

Program/Major Codes: **AOALIBRALART/ALA**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required in all courses for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts .....	6
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	6
Other Requirements .....	6
AGEC Special Requirements	
The I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>35</b>

**Required Core - A grade of C or better is required for graduation.**

Select 25-29 transferable credits from transfer guides, second language courses, or any transferable courses. ....	25-29
Second Language Requirement .....	(0-16)
The second language requirement is dependent upon your major. It is not a requirement for this degree, but many university bachelor of arts degrees require a language course numbered 202, fourth-semester level. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.)	
<b>Subtotal</b> .....	<b>25-29</b>
<b>Total credits as displayed</b> .....	<b>60-64</b>

# Machine Tool Technology

Gain skills and experience needed for employment as a machinist.

## Machine Tool Technology — Certificate for Direct Employment

Learn fundamental skills in machine shop operations, specializing in one of the concentrations listed below.

### What can I do with this certificate?

**Career Options:** Entry-level employment in a variety of machine tool technology careers.

**Academic Options:** Pursue the Machine Tool Technology - AAS Degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-40/48.0503-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7139

Program/Major/Concentration Codes: **CRTMACHNTOOL/MCT/\*\*\*\***

Course Number	Course Title	Credit Hours
<b>General Education Requirements - A grade of C or better is required for graduation.</b>		
Course lists for each General Education category listed below can be found starting on page 76.		
NOTE: Not all Concentrations require General Education, see the Concentration section below.		
	Communication Requirement .....	3
	Analysis and Critical Thinking Requirement .....	†
	GTM 105 fulfills this requirement.	
<b>Subtotal</b> .....		<b>3</b>
<b>Required Core Courses for all concentrations - A grade of C or better is required for graduation.</b>		
MAC 100	Introduction to Machine Tool .....	3
MAC 110*	Manual Machine Shop .....	4
<b>Subtotal</b> .....		<b>7</b>
<b>Required Support Course for all concentrations</b>		
GTM 105*	Applied Technical Mathematics .....	3
<b>Subtotal</b> .....		<b>3</b>
<b>Concentrations - Complete one of the following concentrations:</b>		
Department chair or faculty advisor approval is recommended in the selection of the concentration.		
<b>Manual Machinist</b> (Concentration Code: MACM)		
General Education - not required for this concentration		
<b>Concentration Core Courses</b> – A grade of C or better is required for graduation		
MAC 125*	Mechanical Inspection .....	4
MAC 130*	Machine Setup and Fixture Making .....	3
MAC 275	Applied Metallurgy .....	4
<b>Subtotal</b> .....		<b>11</b>
<b>Concentration Support Courses</b>		
CAD 117	Print Reading with CAD for Manufacturing .....	4
CAD 172*	Geometric Dimensioning and Tolerancing .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>28</b>

**Mechanical Inspector** (Concentration Code: MACI)

General Education - not required for this concentration

**Concentration Core Courses** – A grade of C or better is required for graduation

MAC 125*	Mechanical Inspection.....	4
MAC 275	Applied Metallurgy.....	4
<b>Subtotal.....</b>		<b>8</b>

**Concentration Support Courses**

CAD 117	Print Reading with CAD for Manufacturing.....	4
CAD 172*	Geometric Dimensioning and Tolerancing.....	3
<b>Subtotal.....</b>		<b>7</b>
<b>Total credits as displayed.....</b>		<b>25</b>

**Computer Numerical Control (CNC) Machinist** (Concentration Code: MACC)

**Entrance requirement:** Two years minimum manual machinist or CNC operator experience required, or MAC 110.

General Education – is required for this concentration

**Concentration Core Courses** – A grade of C or better is required for graduation

MAC 125*	Mechanical Inspection.....	4
MAC 150*	Computer Numerical Control (CNC) Mill Programming I.....	4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II.....	4
MAC 160*	Computer Numerical Control (CNC) Lathe Programming.....	4
<b>Subtotal.....</b>		<b>16</b>

**Concentration Support Courses**

CAD 117	Print Reading with CAD for Manufacturing.....	4
CAD 172*	Geometric Dimensioning and Tolerancing.....	3
<b>Subtotal.....</b>		<b>7</b>
<b>Total credits as displayed.....</b>		<b>36</b>

**Computer Numerical Control (CNC) Programmer** (Concentration Code: MACP)

General Education – is required for this concentration

**Concentration Core Courses** – A grade of C or better is required for graduation

MAC 150*	Computer Numerical Control (CNC) Mill Programming I.....	4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II.....	4
MAC 160*	Computer Numerical Control (CNC) Lathe Programming.....	4
MAC 257*	Computer-Aided Machining (CAM) I.....	4
MAC 258*	Computer-Aided Machining (CAM) II.....	4
MAC 259*	Computer-Aided Machining (CAM) III: Solid Modeling.....	4
<b>Subtotal.....</b>		<b>24</b>

**Concentration Support Courses**

CAD 117	Print Reading with CAD for Manufacturing.....	4
CAD 172*	Geometric Dimensioning and Tolerancing.....	3
<b>Subtotal.....</b>		<b>7</b>
<b>Total credits as displayed.....</b>		<b>44</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Machine Tool Technology — Associate of Applied Science Degree for Direct Employment

Learn fundamental skills in machine shop operations, specializing in one of the concentrations listed below.

### What can I do with this certificate?

**Career Options:** Begin a career in machine tool technology.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7139

Program/Major/Concentration Codes: **AASMACHNTOOL/MAC/\*\*\*\*** (see concentration codes below)

Course Number	Course Title	Credit Hours
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### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement	6
Analysis and Critical Thinking Requirement	†
GTM 105* and MAC 275 fulfill this requirement.	
Humanities and Social Science Requirement	6
Computer and Information Literacy Requirement	†
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b>	<b>12</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

MAC 100	Introduction to Machine Tool	3
MAC 110*	Manual Machine Shop	4
MAC 125*	Inspection Quality Assurance	4
MAC 275*	Applied Metallurgy	4
<b>Subtotal</b>		<b>15</b>

### Required Support Courses

CAD 117	Print Reading with CAD for Manufacturing	4
CAD 172*	Geometric Dimensioning and Tolerancing	3
CSA 100*	Computer Literacy	1
GTM 105*	Applied Technical Mathematics	3
<b>Subtotal</b>		<b>11</b>

### Core Concentrations - A grade of C or better is required for graduation.

#### Computer Numerical Control (CNC) Operator (Concentration Code: MACR)

MAC 150*	Computer Numerical Control (CNC) Mill Programming I	4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II	4
MAC 160*	Computer Numerical Control (CNC) Lathe Programming	4
ELEC Technical Electives		12

Complete 14 credit hours at the 100 level or higher from the following list with the approval of the department chair or faculty advisor:  
AUT, BCT, CAD, CIS, CSA, ENG, MAC, MAC 130, MAT, WLD.

<b>Subtotal</b>		<b>24</b>
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<b>Computer Numerical Control (CNC) Programmer</b> (Concentration Code: MACP)	
MAC 150*	Computer Numerical Control (CNC) Mill Programming I ..... 4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II ..... 4
MAC 160*	Computer Numerical Control (CNC) Lathe Programming ..... 4
MAC 257*	Computer-Aided Machining (CAM) I ..... 4
MAC 258*	Computer-Aided Machining (CAM) II ..... 4
MAC 259*	Computer-Aided Machining (CAM) III: Solid Modeling ..... 4
<b>Subtotal</b> .....	<b>24</b>
<b>Total credits as displayed</b> .....	<b>62</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Machine Tool Technology Future Enrollment Programs

These programs have been submitted to the U.S. Department of Education for approval for Title IV Federal Financial Aid. At the time this catalog was submitted for publication, they had not yet been approved.

Students are not currently being admitted to these programs.

Please check the online program displays for changes to the enrollment and financial aid status.

### Manual Machinist — Certificate for Direct Employment

Learn fundamental to advanced manual machining skill sets to fabricate parts and components in a machine shop environment.

#### What can I do with this certificate?

**Career Options:** Entry-level employment in manual machining operations and inspection of parts in the manufacturing industry.

**Academic Options:** Pursue the Machine Tool Technology - Associated of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7139

Program/Major/Concentration Codes: **CRTMMC/MMC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 117	Print Reading with CAD for Manufacturing ..... 4	4
CAD 172*	Geometric Dimensioning and Tolerancing..... 3	3
GTM 105*	Applied Technical Mathematics ..... 3	3
MAC 100	Introduction to Machine Tool ..... 3	3
MAC 110*	Manual Machine Shop ..... 4	4
MAC 125*	Inspection Quality Assurance ..... 4	4
MAC 130*	Machine Setup and Fixture Making ..... 3	3
MAC 275*	Applied Metallurgy ..... 4	4
<b>Total credits as displayed</b> .....		<b>28</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



## Machining Inspection and Quality Assurance — Certificate for Direct Employment

Learn inspection skills in machine shop parts and applied measurement and technology.

### What can I do with this certificate?

**Career Options:** Entry-level employment in mechanical inspection in machine tool related industries.

**Academic Options:** Pursue the Machine Tool Technology - Associated of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7139

Program/Major/Concentration Codes: **CRTMIN/MIN**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 117	Print Reading with CAD for Manufacturing .....	4
CAD 172*	Geometric Dimensioning and Tolerancing.....	3
GTM 105*	Applied Technical Mathematics .....	3
MAC 100	Introduction to Machine Tool .....	3
MAC 125*	Inspection Quality Assurance .....	4
<b>Total credits as displayed .....</b>		<b>17</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Computer Numerical Control (CNC) Operator — Certificate for Direct Employment

Learn fundamental skills in Computer Numerical Control (CNC).

### What can I do with this certificate?

**Career Options:** Entry-level employment as a CNC Operator in the Machine Tool Industry or related industries.

**Academic Options:** Pursue the Machine Tool Technology - Associated of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7139

Program/Major/Concentration Codes: **CRTCNO/CNO**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 117	Print Reading with CAD for Manufacturing .....	4
CAD 172*	Geometric Dimensioning and Tolerancing.....	3
GTM 105*	Applied Technical Mathematics .....	3
MAC 100	Introduction to Machine Tool .....	3
MAC 125*	Inspection Quality Assurance .....	4
MAC 150*	Computer Numerical Control (CNC) Mill Programming I.....	4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II.....	4
MAC 160*	Computer Numerical Control (CNC) Lathe Programming.....	4
<b>Total credits as displayed .....</b>		<b>29</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Computer Numerical Control (CNC) Programmer — Certificate for Direct Employment

Learn programmer skills in Computer Numerical Control (CNC).

### What can I do with this certificate?

**Career Options:** Entry-level employment in CNC programming in a variety of related career fields.

**Academic Options:** Pursue the Machine Tool Technology - Associated of Applied Science Degree.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7139

Program/Major/Concentration Codes: **CRTCNP/CNP**

Course Number	Course Title	Credit Hours
<b>General Education Courses - A grade of C or better is required for graduation.</b>		
<i>Course lists for each General Education category listed below can be found starting on page 74.</i>		
	Communication Requirement .....	3
	Analysis and Critical Thinking Requirement .....	†
	GTM 105 fulfills this requirement.	
<b>Subtotal</b> .....		<b>3</b> ‡

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CAD 117	Print Reading with CAD for Manufacturing .....	4
CAD 172*	Geometric Dimensioning and Tolerancing .....	3
GTM 105*	Applied Technical Mathematics .....	3
MAC 100	Introduction to Machine Tool .....	3
MAC 125*	Inspection Quality Assurance .....	4
MAC 150*	Computer Numerical Control (CNC) Mill Programming I .....	4
MAC 155*	Computer Numerical Control (CNC) Mill Programming II .....	4
MAC 160*	Computer Numerical Control (CNC) Lathe Programming .....	4
MAC 257*	Computer-Aided Machining (CAM) I .....	4
MAC 258*	Computer-Aided Machining (CAM) II .....	4
MAC 259*	Computer-Aided Machining (CAM) III: Solid Modeling .....	4
MAC 275*	Applied Metallurgy .....	4
<b>Total credits as displayed</b> .....		<b>45</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Medical Assistant

## Medical Assistant — Certificate for Direct Employment

Learn advanced skills in patient care and prepare to take exams for licensure.

**Before enrolling in this program**, students achieve passing scores on required College assessment tests and submit the following:

- Health Declaration
- Signed acknowledgement of receipt of drug screening policy
- Residency affidavit
- CPR at Health Care Provider Level (BLS)/first aid certification from a recognized training provider
- Proof of health insurance
- Proof of immunizations: Hepatitis B, MMR, Varicella, TDAP
- TB Test (negative result or a negative chest X-ray)

### What can I do with this certificate?

**Career Options:** Upon completion of this certificate, students are eligible to take the Certified Medical Assistant (CMA) exam, through the American Association of Medical Assistants, or the Registered Medical Assistant (RMA) exam through the American Medical Technologists. Work as a Medical Assistant in physicians’ offices, medical centers, urgent care facilities, and outpatient clinics.

**Academic Options:** Continue your studies by taking courses to qualify as a practical nurse, registered nurse, or medical coding and billing specialist.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-47/51.0711-Gedt.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-6916  
Lead Faculty: 520-206-5072

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
HCA 103	Orientation to Pharmacology .....	3
HCA 119	Orientation to Human Anatomy and Physiology .....	3
MDA 120	Medical Assistant Profession .....	2
MDA 121	Medical Assistant Skills for Success .....	2
MDA 122	Medical Assistant Clinical Care .....	2
MDA 123	Medical Assistant Clinical Procedures .....	3
MDA 124	Medical Terminology for Health Care Workers .....	2
MDA 125	Orientation to ICD-10-CM and CPT Coding .....	3
MDA 127	Administrative Procedures for Medical Assistants .....	3
MDA 128*	Medical Billing and Insurance for Medical Assistants .....	2
MDA 190A*	Medical Assistant Front Office Externship .....	1
MDA 190B*	Medical Assistant Back Office Externship .....	1
<b>Subtotal</b> .....		<b>27</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Medical Laboratory Technician

## Medical Laboratory Technician — Associate of Applied Science Degree for Direct Employment

Prepare for a career in medical laboratory technology through classroom study and supervised clinical experience. Learn about blood, analysis of body fluids, bacteriology, parasitology, clinical chemistry and other aspects of medical laboratory technology.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

**Before enrolling in this program,** you must meet certain requirements.

- This degree program requires a special program application. Students may request a program application when all prerequisites are complete. In addition, students must have completed the preparatory coursework (with grades posted) before they may begin the application process.

**To participate in the clinical portion of the program, students must:**

- Obtain an Arizona Department of Public Safety Fingerprint Clearance Card.
- Pass a urine toxicology screening exam from a certified laboratory.
- Provide proof of immunity status to Measles, Mumps, Rubella and Hepatitis B Virus.
- Provide proof of immunization to Tetanus, Diphtheria, Pertussis, and Influenza.
- Provide proof of a negative TB skin test or a negative chest x-ray within the last two years.
- Provide proof of health insurance coverage.
- Provide a declaration of health from a licensed care provider.

### Essential Functions

To successfully participate in the PCC MLT program and become employable in a medical facility, the student should be able to perform essential functions expected of the working professional. Some examples of these essential functions are:

- **Vision:** Should possess visual acuity, color, shade and depth perception to accurately perform and interpret laboratory tests. Must be able to read computer screens, specimen/reagent labels, and warning signs.
- **Communication:** Should possess the ability to clearly and accurately communicate with patients and health care professionals, and to accurately follow verbal and written instructions.
- **Physical Activity:** Should be able to stand and/or sit for prolonged periods and move freely and safely through the laboratory. Should be able to grasp, sit, squat, stoop, bend, reach, push, pull, and lift and carry up to 50 pounds.
- **Manual Dexterity:** Should possess sufficient hand-eye coordination to efficiently, accurately and safely operate laboratory equipment, such as pipettes, inoculating loops, precision instrumentation, and perform phlebotomy procedures.

*NOTE:* Students in the Medical Laboratory Technician program may be exposed to potentially infectious blood, tissues, and body fluids.

### What can I do with this degree?

**Career Options:** Work in the clinical laboratory of a hospital, clinic, reference laboratory, blood bank, coroner's office or in biomedical research.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6916

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and below and have been officially admitted to the program. See the website or an advisor for details.

**Preparatory Coursework**

Students must have completed the following preparatory coursework before they may begin the application process.

REA 112HP* or REA 112* or an Accuplacer Reading score of 108 or higher. ....	0-4
BIO 201IN* Human Anatomy and Physiology I or BIO 201IH* Human Anatomy, Physiology and Histology with a grade of B or better within the last eight years .....	4-5
Complete the 156IN prerequisite to BIO 201IN as needed. ....	0-4
BIO 205IN* Microbiology with a grade of B or better within the last eight years. ....	4
CHM 151IN* General Chemistry I with a grade of B or better within the last eight years .....	5
MAT 151* College Algebra .....	4
<b>Subtotal</b> .....	<b>17-26</b>

**General Education Requirements A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 and CMN 120 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	†
BIO 202IN, CHM 152IN or 140IN, and the prerequisite for the MAT Preparatory Coursework fulfill this requirement.	
Humanities and Social Science Requirement .....	3
BIO 250 fulfills 3 credits of the Leadership/Ethics category. Complete a course from the Humanities/Fine Arts or Social Science category.	
Computer and Information Literacy Requirement .....	1-3
Special Requirement .....	†
BIO 250 fulfills this requirement.	
<b>Subtotal</b> .....	<b>4-6‡</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

BIO 250	Biomedical Ethics .....	3
MLT 100IN*#Δ	Phlebotomy for Medical Laboratory Technology .....	3
MLT 199*#	Introductory Co-op: Phlebotomy Lab Assisting .....	1
MLT 199WK*#	Introductory Co-op Work: Phlebotomy Lab Assisting .....	1.75
MLT 200#	Urinalysis/Body Fluids .....	3
MLT 211#	Hematology .....	5
MLT 221#	Clinical Chemistry .....	4
MLT 231#	Immunochemistry/Immunology .....	5
MLT 251#	Clinical Microbiology .....	5
MLT 260#	Parasitology and Immunology/Serology .....	3
MLT 299*#	Advanced Co-op: Medical Laboratory Technician .....	1
MLT 299WK*#	Advanced Co-op Work: Medical Laboratory Technology .....	11.5
<b>Subtotal</b> .....	<b>46.25</b>	

**Required Support Courses - A grade of C or better is required for graduation.**

BIO 202IN*	Human Anatomy and Physiology II SUN# BIO 2202 .....	4
CHM 152IN*	General Chemistry II SUN# CHM 1152 .....	5
or CHM 140IN*	Fundamental Organic and Biochemistry SUN# CHM 2230	
CMN 120	Business and Professional Communication .....	3
WRT 101*	English Composition I SUN# ENG 1101.....	3
<b>Subtotal</b> .....	<b>15</b>	
<b>Total credits as displayed (not including preparatory coursework).....</b>		<b>65.25-67.25</b>
<b>Total credits as displayed (including preparatory coursework) .....</b>		<b>82.25-93.25</b>

† Core or support course(s) fulfill this requirement.  
 ‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 # Only one of these courses may be repeated one time. If a course needs to be repeated, re-entry into the remaining courses will be based on space availability.  
 Δ MLT 100IN is the integrated version of the combined lecture and lab courses. MLT 100 and MLT 100LB combined are equivalent to MLT 100IN, and together may be substituted for MLT 100IN.

# Nursing

Gain skills in patient care for employment as a registered nurse, licensed practical nurse, or nursing assistant.

## Associate Degree Nursing — Associate of Applied Science Degree for Direct Employment

Get comprehensive education and practical experience in nursing, and prepare to become licensed as a registered nurse. Students who choose to leave the program before completing the degree may qualify for other certificates.

This program has approval from the Arizona State Board of Nursing, and is accredited by the Accreditation Commission for Education in Nursing, Inc., 3343 Peachtree Rd. NE, Suite 850, Atlanta, GA 30326 [www.acenursing.org](http://www.acenursing.org)

### Before enrolling in this program you must meet certain requirements:

- This degree program requires a special program application. Once all prerequisites are complete students can access the program application on the MyPima Academics tab in the Degrees and Programs section.

### To participate in the clinical portion of the program, the students must:

- Obtain an Arizona DPS Fingerprint Clearance Card.
- Pass a urine toxicology screening exam.
- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients' lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.
- Present proof of a variety of immunizations including but not limited to MMR/Varicella/Hep-B/TDap/influenza.
- Show proof of negative TB skin test or negative chest x-ray for TB.
- Maintain health insurance and a CPR card at the Health Care Provider Level throughout the program.
- Licensed Practical Nurses with work experience, including graduates from Pima's Center for Training and Development, are eligible to apply for entry into the second year of the Associate Degree Nursing (ADN) Program by completing the prerequisites listed above. If accepted, the student must successfully complete a nine credit transition course (NRS 188/188LC/188LS) and 7 credits of co-requisites (WRT101, PSY 101) and meet all acceptance requirements for admission (MAT 097, BIO 201IN/IH, BIO 202IN, CHM 130IN - 16-18 credits) into the third semester of the Associate Degree Nursing (ADN) Program. The Licensed Practical Nurse Training provides 12 credits of prior learning which includes NRS 104/104LC/104LS, NRS 108, and NRS 155.

### Program Transfer and Re-entry

Students currently enrolled in another accredited ADN Nursing Program wishing to transfer to Pima, or students wishing to re-enter the program, should contact the Nursing Department Office at 520-206-6661.

If a student initiates a withdraw, or withdraws while failing, a core nursing class during a semester, they will be withdrawn from all nursing core classes within that semester and will have to repeat all the core courses within the semester (core nursing courses, NRS 102, or NRS 155). This action may have an effect on the student's status in the program, financial aid, and community sponsored support.

Pima Community College and Northern Arizona University have partnered to offer qualified students the opportunity to earn a Bachelor of Science in Nursing while pursuing their Associate's Degree in Nursing. For more information go to <http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/nursing/nursing-concurrent.html>

### What can I do with this degree?

**Career Options:** Take the National Council Licensure Examination (NCLEX-RN) to be eligible to work as a registered nurse.

**Academic Options:** Pursue a bachelor's degree in nursing at a university.

**Location:** West Campus

**Department/Contact Information:**

Department Chair: 520-206-6661

Dean: 520-206-6663

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.



**Program Prerequisites** - These courses are not eligible for Title IV aid.

Students must have completed the following **within the last four years (unless otherwise noted)** before they may begin the application process. Courses must be completed with a grade of B or better.

Complete the Accuplacer reading assessment (no expiration) .....	0
MAT 097* or Math placement into MAT 151* or higher .....	0-3
BIO 202IN* .....	4
<b>Subtotal</b> .....	<b>0-7</b>

**Preparatory Coursework** - These courses may be eligible for Title IV loans only; see a financial aid specialist.

Students must have completed the following **within the last four years (unless otherwise noted)** before they may begin the application process. Courses must be completed with a grade of B or better.

BIO 201IN* or BIO 201IH* .....	4-5
Complete the 156IN prerequisite as needed .....	0-4
<b>Subtotal</b> .....	<b>4-8</b>

**General Education Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 and WRT 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	†
BIO 202IN, 205IN, and the Math program prerequisite fulfill this requirement.	
Humanities and Social Science Requirement .....	3
PSY 101 fulfills 4 credits in the Social Science category. Complete a course from the Humanities/Fine Arts or Leadership/Ethics category which also meets the cultural diversity (C) or the global awareness (G) requirement.	
Computer and Information Literacy Requirement .....	†
Core or support courses fulfill this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> .....	<b>3‡</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

NRS 104*/104LC*/ 104LS*	Nursing Process I .....	8
NRS 105*/105LC*/ 105LS*	Nursing Process II .....	9
NRS 108**	Drug Calculations .....	1
NRS 155*	Introduction to Pharmacology .....	3
NRS 201*/201LC*	Nursing Process III .....	9
NRS 202*/202CA*/ 202CB*	Nursing Process IV .....	9
NRS 203*	Nursing Trends and Issues .....	1
<b>Subtotal</b> .....		<b>40</b>

**Required Support Courses - A grade of C or better is required for graduation.**

BIO 205IN*	Microbiology SUN# BIO 2205 .....	4
ECE 107* or PSY 240*	Human Development and Relations .....	3
PSY 101	Developmental Psychology .....	
PSY 101	Introduction to Psychology SUN# PSY 1101 .....	4
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102 .....	3
<b>Subtotal</b> .....		<b>17</b>

**Total credits as displayed (not including program prerequisites or preparatory coursework) .....** 60

**Total credits as displayed (including program prerequisites and preparatory coursework) .....** 68-76

† Support or core course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by other program requirements.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* NRS 108 requires a grade of A.

# Paralegal

Prepare for entry-level paralegal or legal assistant positions with these programs approved by the American Bar Association.

## Paralegal — Associate of Applied Science Degree for Direct Employment

Learn to investigate legal cases, draft legal documents and perform legal research under the supervision of an attorney. Program includes a paralegal internship.

### What can I do with this degree?

**Career Options:** Become a paralegal or legal assistant, title examiner, trust officer, contract clerk, legal investigator or law firm administrator.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7298

Program/Major Codes: **AASLEGALASST/LAS**

### General Education Requirements - A grade of C or better is required for graduation.

Communication Requirement . . . . .	†
WRT 101 and 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement . . . . .	†
Mathematics and Science support courses fulfill this requirement.	
Humanities and Social Science Requirement . . . . .	†
Humanities and Social Science support courses fulfill this requirement.	
Computer and Information Literacy Requirement . . . . .	†
CIS/CSA 104 fulfills this requirement.	
<b>Subtotal . . . . .</b>	<b>0¥</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

PAR 101	Introduction to Paralegal Careers . . . . .	3
PAR 102*	Civil Litigation Procedures I . . . . .	3
PAR 103*	Legal Research . . . . .	3
PAR 104*	Paralegal Ethics . . . . .	3
PAR 106*	Civil and Criminal Evidence . . . . .	3
PAR 202*	Civil Litigation Procedures II . . . . .	3
PAR 211*	Legal Writing . . . . .	3
PAR 213*	Computer Assisted Legal Research . . . . .	3
<b>Subtotal . . . . .</b>		<b>24</b>

PAR ELEC	PAR Specialty Area Electives	
Complete 15 credits from the following PAR specialty area electives course list: (Specialty courses are not offered every semester. Consult with a PAR faculty advisor or counselor to determine class offerings.)		
PAR 203*	Tort Law Procedures . . . . .	3
PAR 204*	Wills, Trusts, and Estates . . . . .	3
PAR 206*	Criminal Law and Procedures I . . . . .	3
PAR 207*	Criminal Law and Procedures II . . . . .	3
PAR 208*	Domestic Relations and Family Law . . . . .	3

PAR 209*	Bankruptcy Procedures .....	3
PAR 212*	Law Office Computerization .....	3
PAR 215*	Corporate Law Procedures .....	3
PAR 217*	Real Estate Legal Procedures .....	3
PAR 218*	Administrative Law: Employment.....	1
PAR 219*	Administrative Law: Immigration.....	1
PAR 220*	Administrative Law: Social Security.....	1
PAR 290*	Paralegal Internship .....	4
(The internship is designed to give the students work experience at an approved site. For students in their final semester of course work. Application and acceptance required.)		
<b>Subtotal</b> .....		<b>15</b>

**Required Support Courses**

ACC 100 or ACC 211*	Practical Accounting Procedures .....	3
	Financial Accounting ( <i>was ACC 101</i> ) SUN# ACC 2201 .....	
CIS/CSA 104*	Computer Fundamentals .....	3
CMN 110	Public Speaking .....	3
POS 201 or POS 210	American National Government and Politics SUN# POS 1110.....	3
	National and State Constitutions .....	
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102.....	3

**Analysis and Critical Thinking Requirement** ..... 6  
 Select from the following course lists only.

Mathematics Category

The Mathematics competency requirement must be met by assessment or course work.  
 Any MAT course at the 100 level or higher (except MAT 108).

Science Category

AST 101IN, 102IN\*, 105IN\*; BIO 100IN or higher (except BIO 296, 299, 299WK);  
 CHM 121IN or higher (except CHM 290, 295LB);  
 GEO 101, 102;  
 GLG 101IN, 102IN;  
 PHY 121IN\*, or 122IN\*, or 210IN\*, or 216IN\*, or 221IN\*

Critical Thinking Category

PHI 120

**Humanities and Social Science Requirement** ..... 3

Select from the following course list only.

Humanities and Fine Arts Category

ANT 112, 148, 205, 206,  
 ART 130, 131,  
 HIS 101, 102, 113, 114, 122, 124, 141, 142, 148, 160\*, 161\*,  
 HUM 251, 252, 253, 260,  
 LIT 261\*  
 REL 234\*\*

Any AGECE requirement from the "Other Requirements Options:" Second Language list that has a "G" designation.

**Subtotal** ..... **27**

**Total credits as displayed** ..... **66**

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* No longer offered, but will fulfill requirement.

## Paralegal - Post-Degree Certificate for Direct Employment

Learn to investigate legal cases, draft legal documents, and perform legal research under the supervision of an attorney. This program includes a paralegal internship.

**Before enrolling in this program,** you must have earned a bachelor’s degree or an Associate of Arts or Science from an accredited post-secondary institution.

### What can I do with this certificate?

**Career Options:** Seek a position as a paralegal or legal assistant, title examiner, trust officer, contract clerk, legal investigator or law firm administrator.

**Academic Options:** Continue your studies by taking additional professional development courses.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-22/22.0302-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134; Lead Faculty: 520-206-7352

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
PAR 101	Introduction to Paralegal Careers	3
PAR 102*	Civil Litigation Procedures I	3
PAR 103*	Legal Research	3
PAR 104*	Paralegal Ethics	3
PAR 106*	Civil and Criminal Evidence	3
PAR 202*	Civil Litigation Procedures II	3
PAR 211*	Legal Writing	3
PAR 213*	Computer Assisted Legal Research	3
<b>Subtotal</b>		<b>24</b>
PAR ELEC	PAR Specialty Area Electives	
Complete 15 credits from the following PAR specialty area electives course list: (Specialty courses are not offered every semester. Consult with a PAR faculty advisor to determine class offerings.)		
PAR 203*	Tort Law Procedures	3
PAR 204*	Wills, Trusts, and Estates	3
PAR 206*	Criminal Law and Procedures I	3
PAR 207*	Criminal Law and Procedures II	3
PAR 208*	Domestic Relations and Family Law	3
PAR 209*	Bankruptcy Procedures	3
PAR 212*	Law Office Computerization	3
PAR 215*	Corporate Law Procedures	3
PAR 217*	Real Estate Procedures	3
PAR 218*	Administrative Law: Employment	1
PAR 219*	Administrative Law: Immigration	1
PAR 220*	Administrative Law: Social Security	1
PAR 290*	Paralegal Internship	4
(The internship is designed to give the students work experience at an approved site. For students in their final semester of course work. Application and acceptance is required.)		
<b>Subtotal</b>		<b>15</b>

<b>Required Support Course</b>	
WRT 101*	English Composition I SUN# ENG 1101 ..... 3
or WRT 102*	English Composition II SUN# ENG 1102
<b>Subtotal</b>	<b>.....3</b>
<b>Total credits as displayed</b>	<b>.....42</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Pharmacy Technology

Learn how to assist pharmacists in packaging and distributing medications.

## Pharmacy Technology — Certificate for Direct Employment

Learn to work as a pharmacy technician assisting a pharmacist. This program includes training within laboratory and clinical settings.

**Before enrolling in this program,** you must submit a Pharmacy Technology application, which is available online in two formats.

NOTE: Some PHT courses have reading and/or math prerequisites. Before beginning PHT coursework, students will need to have either completed REA 091 (or higher) and MAT 092 (or higher); or meet course prerequisite requirements through assessment (i.e. assessment score at the REA 112 level or higher, or Mathematics assessment score at MAT 097 or higher).

Prospective students with a criminal background see [www.pima.edu/programs-courses/credit-programs-degrees/health-professions/pharmacy-tech/pharmacy-tech-aas-admission.html](http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/pharmacy-tech/pharmacy-tech-aas-admission.html) for licensure and clinical practice eligibility.

### What can I do with this certificate?

**Career Options:** Work in hospitals, nursing care facilities and drug stores and with drug manufacturers, wholesale drug houses and health maintenance organizations.

**Academic Options:** Continue taking classes toward earning a Pharmacy Technology AAS degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-49/51.0805-Gedt.html>

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-6916  
Lead Faculty: 520-206-7850

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 fulfills this requirement	
Analysis and Critical Thinking Requirement .....	3
<b>Subtotal</b> .....	<b>3</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

PHT 170*	Introduction to Pharmacy Technology .....	2
PHT 171IN*	Pharmaceutical Calculations .....	4
PHT 172*	Drug Therapy I .....	4
PHT 175IN*	Pharmacy Operations .....	5
PHT 179IN*	Sterile Products .....	5
PHT 181*	Interprofessional Relations in Pharmacy .....	3
PHT 182*	Drug Therapy II .....	4
PHT 187*	Pharmacy Law and Ethics .....	3
PHT 190LB*	Pharmacy Technician Internship .....	4
PHT 197*	Clinical Seminar .....	2
<b>Subtotal</b> .....		<b>36</b>



<b>Required Support Courses</b>	
WRT 101*	English Composition I SUN# ENG 1101 .....3
<b>Subtotal</b>	<b>3</b>
<b>Total credits as displayed</b>	<b>42</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 † Core or support course(s) fulfill this requirement.

## Pharmacy Technology — Associate of Applied Science Degree for Direct Employment

Learn to work in a pharmacy, including medication dispensing, business administration and supervisory skills. This program includes training within laboratory and clinical settings.

**Before enrolling in this program**, you must submit a Pharmacy Technology application, which is available online in two formats.

NOTE: Some PHT courses have reading and/or math prerequisites. Before beginning PHT coursework, students will need to have either completed REA 091 (or higher) and MAT 092 (or higher); or meet course prerequisite requirements through assessment (i.e. assessment score at the REA 112 level or higher, or Mathematics assessment score at MAT 097 or higher).

Prospective students with a criminal background see [www.pima.edu/programs-courses/credit-programs-degrees/health-professions/pharmacy-tech/pharmacy-tech-aas-admission.html](http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/pharmacy-tech/pharmacy-tech-aas-admission.html) for licensure and clinical practice eligibility.

### What can I do with this degree?

**Career Options:** Work in hospitals, nursing care facilities and drug stores, and with pharmaceutical manufacturers, wholesale pharmaceutical companies and health maintenance organizations.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima’s Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-6916  
 Lead Faculty: 520-206-7850

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement	3
WRT 101 fulfills 3 credits of this requirement. Complete CMN 120 or WRT 102	
Analysis and Critical Thinking Requirement	†
Humanities and Social Science Requirement	6
Computer and Information Literacy Requirement	†
Core courses fulfill this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b>	<b>9</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
PHT 170*	Introduction to Pharmacy Technology .....	2
PHT 171IN*	Pharmaceutical Calculations .....	4
PHT 172*	Drug Therapy I .....	4
PHT 175IN*	Pharmacy Operations .....	5
PHT 179IN*	Sterile Products .....	5
PHT 181*	Interprofessional Relations in Pharmacy .....	3
PHT 182*	Drug Therapy II .....	4
PHT 187*	Pharmacy Law and Ethics .....	3
PHT 190LB*	Pharmacy Technician Internship .....	4
PHT 197*	Clinical Seminar .....	2
<b>Subtotal</b> .....		<b>36</b>
<b>Required Support Courses</b>		
WRT 101*	English Composition I SUN# ENG 1101 .....	3
Electives	.....	12
Choose 6-10 credits that fulfill Analysis and Critical Thinking for General Education requirement (including Math competency); select the remaining number of elective credits needed to meet a minimum 12 credits for support course requirements. Transfer courses from the following prefixes are recommended: BIO, CHM, MAT, Language courses, or courses that lead to an AGECA-A, see advisor for guidance.		
<b>Subtotal</b> .....		<b>15</b>
<b>Total credits as displayed</b> .....		<b>60</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Phlebotomy

## Phlebotomy — Certificate for Direct Employment

Learn skills to prepare for employment in the area of phlebotomy and prepare to take exams for national certification. This certificate is offered at the Center for Training and Development, Desert Vista Campus and earns college credit.

**Before enrolling in this program,** students must submit the following:

- Health Declaration
- Signed acknowledgement of receipt of drug screening policy
- Proof of health insurance
- Residency affidavit
- Proof of Immunizations: Hepatitis B, MMR, Varicella, TDAP (recommended)
- TB Test (negative result or a negative chest X-ray)

### *What can I do with this certificate?*

**Career Options:** Once eligible, students are encouraged to take one of the national certification exams in phlebotomy. Work as a phlebotomist in physician’s offices, medical centers, clinics, and medical laboratories.

**Academic Options:** Take courses in medical laboratory technology, medical assisting, registered nursing or practical nursing.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-5072

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
PHB 160	Foundations of Phlebotomy .....	3
PHB 162*	Safety Standards in Phlebotomy .....	3
PHB 164*	Professional Practices in Phlebotomy .....	3
PHB 166LB*	Phlebotomy Laboratory Practice .....	2
PHB 190LC*	Clinical Internship in Phlebotomy .....	1-3
<b>Total Credits as Displayed .....</b>		<b>12-14</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Political Science

## Associate of Arts Degree for Transfer

The political science program is designed to prepare students for transfer to a political science program at a four-year institution. Following a four-year degree, students may also pursue graduate degrees in law, international business communications, political science, public administration, and management. Although it is not intended for direct employment, the political science Associate of Arts Degree for Transfer may be recognized by some employers for entry level positions.

### What can I do with this degree?

**Academic Options:** Transfer to a 4-year university to complete a political science degree.

**Locations:** All campuses

**Program/Major Codes:** AOAPOLITLSCI/POS

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts .....	6
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	3
POS 100 fulfills 3 credits of this requirement. Complete a non-POS course from this category.	
Other Requirements .....	†
POS 201 and a language course fulfill this requirement.	
Special Requirements	
POS 201 fulfills the C requirement. POS 202 fulfills the G requirement. The I requirement must be fulfilled by a course in the above categories.	
<b>Subtotal .....</b>	<b>26 ¥</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
POS 100	Introduction to Politics .....	3
POS 201	American National Government and Politics SUN# POS 1110.....	3
POS 202	Introduction to International Relations SUN# POS 1120.....	3
POS 203	Introduction to Political Ideas .....	3
POS 204	Introduction to Comparative Politics SUN# POS 2204 .....	3
<b>Subtotal .....</b>		<b>15</b>
<b>Required Support Courses</b>		
Second Language Requirement .....	4-16	
Completion of a language course numbered 202*, fourth-semester level. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.) If a student satisfies the language requirement in fewer than 16 credits, additional credit hours of transferable electives may be required to meet the minimum associate degree requirement of 60 credit hours.		
Electives .....	3-19	
Complete 3-19 transferable credits so the total credits for the degree are 60-64.		
<b>Subtotal .....</b>		<b>19-23</b>
<b>Total credits as displayed .....</b>		<b>60-64</b>

† Core or support course(s) fulfill this requirement.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

¥ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

# Psychology

## Psychology Concentration — Transfer

Students planning to transfer to a university to major in psychology should complete this psychology concentration\*\* as part of completing the **Associate of Arts in Liberal Arts degree**, including an **AGEC-A**. Students should meet with a Psychology faculty member, an advisor, or a counselor to plan their course of study using the appropriate transfer guide.

### What can I do with this degree?

**Academic Options:** Transfer to a university and major in subjects other than science, business or technology. Additional information on transferring to a university is available online (<http://www.pima.edu/transfer/transferringfrompima.shtml>) or from any advisor or counselor.

**Locations:** All campuses

**Contact Information:**

**Dean: 520-206-7666**

or contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).

Program/Major Codes: **AOALIBRALART/ALA/ALAP**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required in all courses for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences .....	8
Mathematics.....	3
Social and Behavioral Sciences .....	3
PSY 101 fulfills credits of this requirement. Complete a non-PSY course from this category.	
Other Requirements .....	3
PSY 230 meets 3 credits of this requirement. Complete another course from this category.	
AGEC Special Requirements	
The I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>29</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses – A grade of C or better is required for graduation.

PSY 101	Introduction to Psychology SUN# PSY 1101 .....	4-6
or PSY 100A*		
and PSY 100B*	Psychology I and Psychology II	
PSY 230*	Psychological Measurements and Statistics .....	3
PSY 289*	Research Methods.....	4

### Select one additional course from the list below.

PSY 132*	Psychology and Culture .....	3
PSY 214*	Abnormal Psychology .....	3
PSY 215*	Human Sexuality .....	3
PSY 216*	Psychology of Gender .....	3
PSY 218*	Health Psychology .....	3
PSY 220*	Psychology of Death & Loss .....	3
PSY 240*	Developmental Psychology.....	3
PSY 254*	Psychology of Love and Compassion .....	3
PSY 262*	Positive Psychology .....	3
<b>Subtotal .....</b>		<b>14-16</b>

**Required Support Courses - A grade of C or better is required for graduation.**

**Transfer Electives**

Select 19-21 transferable credits from second language courses, or any transferable courses..... 19-21

Second Language: While it is not a requirement for this degree, many university Bachelor of Arts degrees, including the University of Arizona and Arizona State University, require a language course numbered 202, fourth-semester level, for the BA in Psychology. Many universities, including the University of Arizona, require a language course numbered 102, second-semester level, for the BS in Psychology. Students are recommended to meet complete any required language courses at Pima as part of the transferable electives before transferring. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.)

**Subtotal** ..... **19-21**

**Total credits as displayed** ..... **60-64**

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* To be awarded this concentration you must complete the course requirements above and the Associate of Arts in Liberal Arts with an AGEC-A.



# Radiologic Technology

Become a technologist in the field of diagnostic medical imaging.

## Radiologic Technology — Associate of Applied Science Degree for Direct Employment

Learn diagnostic medical imaging, equipment operation, radiographic procedures, patient care, and radiation safety and protection. This program is accredited by the Joint Review Committee of Education for Radiologic Technology.

### Before enrolling in this program, you must complete certain requirements:

In addition to the course prerequisites listed below, this degree program requires a special program application. Once all preparatory coursework is complete, students can access the program application on the MyPima Academics tab in the Degree and Programs section.

Prospective students with misdemeanor or felony convictions see [www.pima.edu/programs-courses/credit-programs-degrees/health-professions/radiologic-technology/admissions.html](http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/radiologic-technology/admissions.html) for important information on licensure.

### To participate in the program, the students must:

- Provide and maintain an Arizona DPS Fingerprint Clearance Card.
- Pass an annual urine toxicology screening exam.
- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. The clinical Radiologic Technology program also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients' lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.
- Provide own transportation to various clinical facilities throughout the Tucson regional area.
- Present proof of immunizations or immunity for MMR/Varicella/TDaP.
- Obtain an annual flu shot.
- Negative PPD Tuberculosis initial 2-step process.
- Clinical rotations are at various clinical facilities throughout the Tucson regional area.
- Maintain health insurance and a current CPR card at the Health Care Provider Level throughout the program.

### What can I do with this degree?

**Career Options:** Eligibility to apply for the medical radiography exam by the American Registry of Radiologic Technologists and qualify to work in hospitals, clinics and doctors' offices.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** West Campus

#### Department/Contact Information:

Dean: 520-206-6916

Lead Faculty: 520-206-3105

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

### Program Prerequisites - These courses are not eligible for Title IV aid.

Students must have completed the following (with grades posted) before they may begin the application process.

International students must score higher than 450 on the institutional TOEFL (Test of English as a Second Language.)

MAT 151\* or higher with a grade of C or higher within the last four years; or placement into MAT 189 in the last four years . . . . . 0-4

BIO 2021N\*Δ . . . . . 4

**Subtotal** . . . . . **4**

**Preparatory Coursework** - These courses may be eligible for Title IV loans only; see a financial aid specialist.

Students must have completed the following (with grades posted) before they may begin the application process.

REA 112HP** with a grade of B or higher, or Accuplacer reading assessment score of 108 or higher.....	0-4
BIO 201IN*Δ or BIO 201IHA .....	4-5
Complete the BIO 156IN* prerequisite as needed .....	0-4
<b>Subtotal .....</b>	<b>4-17</b>

**General Education Requirements** - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 and WRT 102 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	†
Preparatory coursework fulfills this requirement.	
Humanities and Social Science Requirement .....	3
PSY 101 fulfills 4 credits of this requirement. Complete a course from the Humanities & Fine Arts or the Leadership & Ethics category which also meets the cultural diversity (C) or global awareness (G) requirement.	
Computer and Information Literacy Requirement .....	†
CSA 100 fulfills this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>3¥</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

RAD 170/170LB*	Medical Imaging Fundamentals/Lab .....	3
RAD 171/171LB*	Radiographic Positioning I/Lab .....	4.5
RAD 172/172LB*	Medical Imaging Technology I/Lab.....	3.5
RAD 173LC*	Clinical Education I .....	6
RAD 174/174LB*	Radiographic Positioning II/Lab.....	4.5
RAD 175/175LB*	Medical Imaging Technology II/Lab .....	3.5
RAD 176LC*	Clinical Education II .....	6
RAD 177LC*	Clinical Education III .....	6
RAD 180*	Introduction to Radiation Biology.....	1
RAD 181*	Radiographic Positioning III .....	3
RAD 182*	Medical Imaging Technology III .....	3
RAD 183LC*	Clinical Education IV .....	4
RAD 184/184LB*	Radiographic Positioning IV/Lab .....	3.5
RAD 185*	Clinical Seminar .....	2.5
RAD 186LC*	Clinical Education V .....	6
<b>Subtotal .....</b>	<b>60</b>	

**Required Support Courses - A grade of C or better is required for graduation.**

CSA 100#	Computer Literacy.....	1
PSY 101	Introduction to Psychology SUN# PSY 1101 .....	4
WRT 101*	English Composition I SUN# ENG 1101 .....	3
WRT 102*	English Composition II SUN# ENG 1102.....	3
<b>Subtotal .....</b>	<b>11</b>	

**Total credits as displayed (not including program prerequisites or preparatory coursework)..... 74**

**Total credits as displayed (including program prerequisites and preparatory coursework).....82-94**

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* REA 112 will also be accepted.

Δ The BIO 201 and 202 courses must be completed with a combined average of B or better within the last six years. Note: Minimal course grade requirement can be met with a grade of C in one course and a grade of A in the other.

# CIS/CSA 104 will also be accepted.

# Respiratory Care

## Respiratory Care — Associate of Applied Science Degree for Direct Employment

Develop skills through classroom and clinical experience to become a respiratory therapist. Pima Community College's Respiratory Care program is accredited by the Commission on Accreditation for Respiratory Care ([www.coarc.com](http://www.coarc.com)).

Commission on Accreditation for Respiratory Care  
1248 Harwood Road, Bedford, Texas 76021-4244  
817-283-2835 (telephone), 817-354-8519 (fax)

**Before enrolling in this program**, you must complete certain requirements. This program requires a special Respiratory Care – AAS program application. Once all preparatory coursework is complete, students can access the program application on the MyPima Academics tab in the Degrees and Programs section.

### To participate in the clinical portion of the program, the students must:

- Provide and maintain an Arizona DPS Fingerprint Clearance Card.
- Pass a urine toxicology screening exam.
- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients without the use of a mechanical device, stand and walk for several hours at a time, perform bending activities, move medical equipment, and perform chest compressions. The clinical Respiratory Care Program also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients' lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.
- Be able to assess and gather information regarding the patient, i.e., color changes in the skin, hearing heart and lung sounds through a stethoscope, feeling pulses, communicate effectively with the patient and health care team, and the ability to synthesize the data obtained to critically think and make emergency decisions.
- Present proof of immunization or immunity for MMR/Varicella/Hep-B/TDaP.
- Show proof of negative TB skin test or negative chest x-ray for TB.
- Maintain health insurance and a CPR card at the Health Care Provider Level throughout enrollment in the program.

Note: The Commission on Accreditation for Respiratory Care requires students to successfully complete an Advanced Cardiac Life Support course prior to graduation. The Respiratory Care program requires successful completion of the Advanced Cardiac Life Support course prior to the third semester of the program.

### Important Information on Licensure

- Students should be aware that federal and state law requires documentation that the applicant for Respiratory Care Practitioner licensure is a U.S. citizen, national, or a person described in specific categories, to be eligible for licensure in Arizona.
- All applicants applying or renewing a license must also demonstrate U.S. citizenship or lawful presence in the U.S. A statement of Citizenship form with the documents identified in the Evidence of Citizenship attachment must accompany all license applications and renewals.

### What can I do with this degree?

**Career Options:** Apply to take the exam given by the National Board of Respiratory Care to become a certified respiratory therapist. This degree also qualifies graduates to take the registered respiratory therapist exam. Become licensed in Arizona. Work in hospitals, special-care facilities and other settings taking care of cardiopulmonary patients.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** West Campus

#### Department/Contact Information:

Dean: 520-206-6916

Lead Faculty: 520-206-3106

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

**Program Prerequisites** - These courses are not eligible for Title IV aid.

Students must have completed the following (with grades posted) before they may begin the application process.

International students must score higher than 450 on the institutional TOEFL (Test of English as a Second Language)

Within the last eight years: MAT 097* (or MAT 122* If taken before Fall 2016) or placement Into MAT 151 or higher .....	0-4
CHM 130IN* with a grade of C or better, or Chemistry assessment score of 34 or higher .....	0-5
WRT 101* English Composition I with a C or better .....	3
<b>Subtotal</b> .....	<b>3-12</b>

**Preparatory Coursework** - These courses may be eligible for Title IV loans only; see a financial aid specialist.

Students must have completed the following (with grades posted) before they may begin the application process.

REA 112HP** or Accuplacer reading assessment score of 108 or higher .....	0-4
Within the last six years with a grade of C or better: BIO 160IN; or BIO 201IH and BIO 202IN; or BIO 156IN, 201IN, and 202IN.....	4-12
<b>Subtotal</b> .....	<b>4-16</b>

**General Education Requirements - A grade of C or better is required for graduation.**

*Course lists for each General Education category listed below can be found starting on page 74.*

Communication Requirement .....	†
WRT 101 preparatory coursework and WRT 102 fulfill this requirement	
Analysis and Critical Thinking Requirement .....	†
BIO 205IN, CHM 130IN and the MAT program prerequisite fulfill this requirement	
Humanities and Social Science Requirement .....	3
PSY 101 fulfills 4 credits of this requirement. Complete a course from the Humanities or Leadership & Ethics category which also meets the cultural diversity (C) or global awareness (G) requirement.	
Computer and Information Literacy Requirement .....	†
Core courses fulfill this requirement	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> .....	<b>3</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

HCA 152	Advanced Cardiac Life Support .....	2
RTH 110*	Introduction to Respiratory Care .....	4
RTH 112*	Respiratory Physiology .....	4
RTH 121/121LB*	Basic Therapeutics/Lab .....	5
RTH 123/123LB*	Basic Assessment and Monitoring/Lab .....	4
RTH 124*	Pharmacology for Respiratory Care .....	3
RTH 125LC*	Clinical Procedures I .....	1
RTH 135LC*	Clinical Procedures II .....	3
RTH 162*	Principles of Mechanical Ventilation .....	3
RTH 241/241LB*	Critical Care Therapeutics/Lab .....	5
RTH 243/243LB*	Advanced Assessment and Monitoring/Lab .....	5
RTH 245LC*	Clinical Procedures III .....	4
RTH 246*	Cardiorespiratory Disorders I .....	3
RTH 251/251LB*	Specialty Therapeutics/Lab .....	5
RTH 255LC*	Clinical Procedures IV .....	4
RTH 256*	Cardiorespiratory Disorders II .....	3
RTH 257LB*	Clinical Applications and Professional Development .....	1
<b>Subtotal</b> .....		<b>59</b>

**Required Support Courses**

BIO	205IN*	Microbiology SUN# BIO 2205.....	4
PSY	101	Introduction to Psychology SUN# PSY 1101.....	4
WRT	102*	English Composition II with a C or better SUN# ENG 1102 .....	3
<b>Subtotal .....</b>			<b>11</b>
<b>Total credits as displayed (not including program prerequisites or preparatory coursework).....</b>			<b>73</b>
<b>Total credits as displayed (including program prerequisites and preparatory coursework).....</b>			<b>80-101</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* REA 112 will also be accepted.

# Science

## Science - Associate of Science Degree for Transfer

Complete lower-division general education requirements for transferring to a university to pursue a major in the life sciences, physical sciences, or computer science. Students interested in preparing for professional degrees in dentistry, medicine or veterinary science should complete this degree.

Pre-Pharmacy students should complete the **Associate of Arts degree**.

Students who wish to transfer to an Arizona university and pursue a major in any of the following areas, should complete the PCC **Associate of Science degree for transfer** (refer to university transfer guides for core or elective courses and language requirements).

- Astronomy
- Biochemistry
- Biology (for UA; for ASU and NAU you can complete the Associate of Arts)
- Chemistry
- Computer Science
- Engineering
- Exercise Science
- Geology
- Microbiology
- Molecular/Cellular Biology
- Physics
- Pre-Agriculture
- Pre-Dentistry
- Pre-Medicine
- Pre-Veterinary Science
- Zoology

### What can I do with this degree?

**Academic Options:** Transfer to a university in a life or physical sciences program, computer science or engineering program.

**Locations:** All campuses

**Contact Information:** Contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).

Program/Major Codes: **AOSSCIENCE/ASI**

### Arizona General Education Curriculum Requirements (AGEC-S) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences** .....	†
The combination of BIO 181IN & 182IN, or CHM 151IN & 152IN, or PHY 210IN & 216IN fulfill this requirement.	
Mathematics.....	†
MAT 220 fulfills this requirement.	
Social and Behavioral Sciences .....	6
Other Requirement Options.....	6
Complete MAT courses above MAT 220 and/or additional Science courses from the Biological and Physical Sciences list.	
AGEC Special Requirements	
The I, C, and G requirements should be fulfilled by completing appropriate courses in the above categories.	
<b>Subtotal .....</b>	<b>24 †</b>



Course Number	Course Title	Credit Hours
<b>Required Core Courses: A grade of C or better is required in all courses for graduation.</b>		
BIO 181IN* and BIO 182IN* OR CHM 151IN* and CHM 152IN* OR PHY 210IN* and PHY 216IN*	General Biology I: (Majors) SUN# BIO 1181 ..... General Biology II: (Majors) SUN# BIO 1182 ..... General Chemistry I SUN# CHM 1151 ..... General Chemistry II SUN# CHM 1152 ..... Introductory Mechanics SUN# PHY 1121 ..... Introductory Electricity and Magnetism SUN# PHY 1131 .....	8-10
MAT 220*	Calculus I SUN# MAT 2220 .....	5
Major/Electives	.....	21-27
Complete additional science and math courses as needed to meet major requirements for a bachelor's degree. The second language requirement is dependent upon your major. It is not a requirement of this degree, but some university degrees require a language proficiency. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.)		
<b>Subtotal</b>	.....	<b>36-40</b>
<b>Total credits as displayed</b>	.....	<b>60-64</b>

† Core or support course(s) fulfill this requirement.

‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* See a Major Guide for selection of the appropriate science course sequence.

# Social Services

Gain knowledge and skills for employment in social service organizations that provide community services including service delivery, community outreach and intervention.

## Social Services — Associate of Applied Science Degree for Direct Employment

Learn core principles and skills in social work, community services and casework management.

### What can I do with this degree?

**Career Options:** Entry-level employment in social service positions.

**Academic Options:** Students intending to transfer to a four-year university should pursue the Social Services Associate of Arts degree.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **AASSOCIALSRV/SSE**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	6
Analysis and Critical Thinking Requirement . . . . .	6
Humanities and Social Science Requirement . . . . .	3
SSE 110 fulfills 3 credits of the Social Science category. Complete a course from the Humanities & Fine Arts or Leadership & Ethics category.	
Computer and Information Literacy Requirement . . . . .	1-3
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal . . . . .</b>	<b>16-18¥</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

SSE 110	Introduction to Social Welfare . . . . .	3
SSE 111	Group Work . . . . .	3
SSE 210*	Community Organization and Development . . . . .	3
SSE 211*	Group Technique Applications . . . . .	3
SSE 281*	Social Service Delivery Systems (was SSE 212) . . . . .	3
SSE 285*	Foundations of Social Work Practice (was SSE 202) . . . . .	3
SSE 292*	Social Services Field Experience . . . . .	4
<b>Subtotal . . . . .</b>		<b>22</b>

### Required Support Courses

SSE Electives . . . . .	3
Electives - Complete 17-23 credits so the total credits for the degree are 60-64. . . . .	17-23
Please see an advisor to select appropriate course work.	
<b>Subtotal . . . . .</b>	<b>20-26</b>
<b>Total credits as displayed . . . . .</b>	<b>60-64</b>

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Social Services — Associate of Arts Degree for Transfer

Prepare to transfer to a university to complete a degree in social work.

### What can I do with this degree?

**Career Options:** Entry-level employment in social service positions.

**Academic Options:** Transfer to ASU majoring in social work; may also transfer to other BSW programs.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **AOASOCIALSRV/SST**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts. ....	3
PHI 101 or 130 fulfills 3 credits of this requirement. Complete a course from the Art List.	
Biological and Physical Sciences .....	4
BIO 156IN or 160IN fulfill 4 credits of this requirement. Complete another course from this category.	
Mathematics.....	†
MAT 141, 142 or 151 fulfills this requirement	
Social and Behavioral Sciences .....	†
SSE 110 and either ECN 150 or 202 fulfill this requirement.	
Other Requirements .....	†
POS 201 and either PSY 101 or SOC 101 fulfills this requirement.	
Special Requirements	
POS 201 fulfills the C requirements. The I and G requirements should be fulfilled by selecting appropriate courses in the above categories	
<b>Subtotal .....</b>	<b>13†</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

SSE 110	Introduction to Social Welfare .....	3
SSE 111	Group Work .....	3
SSE 210*	Community Organization and Development .....	3
SSE 211*	Group Technique Applications .....	3
SSE 281*	Social Service Delivery Systems (was SSE 212) .....	3
SSE 285*	Foundations of Social Work Practice (was SSE 202) .....	3
SSE Transferable Electives .....		3
<b>Subtotal .....</b>		<b>21</b>

### Required Support Courses

BIO 156IN*	Introductory Biology for Allied Health .....	4
or BIO 160IN	Introduction to Human Anatomy and Physiology	
ECN 150*	An Economic Perspective .....	3
or ECN 202*	Macroeconomic Principles SUN# ECN 2201	
MAT 141 or 142 *	Topics in College Mathematics SUN# MAT 1142.....	3-4
or MAT 151*	College Algebra SUN# MAT 1151	
or any MAT course numbered above 151		
PHI 101	Introduction to Philosophy SUN# PHI 1101 .....	3
or PHI 130	Introductory Studies in Ethics and Social Philosophy SUN# PHI 1105	
POS 201	American National Government and Politics SUN# POS 1110 .....	3
PSY 101	Introduction to Psychology SUN# PSY 1101 .....	3-4
or SOC 101	Introduction to Sociology SUN# SOC 1101	

Transferable Electives .....	7-12
See your advisor to select 7 to 12 credits of transferable electives so the program total is 60 to 64 credits.	
Language requirement: 4th semester proficiency in a language is required by ASU. This proficiency may be demonstrated through completion of a language course numbered 202 or via assessment at ASU. If more than 64 credits are required to reach fourth-semester proficiency while at PCC, the requirement will be fulfilled but no more than 64 credits will be applied toward the bachelor's degree.	
<b>Subtotal .....</b>	<b>26-30</b>
<b>Total credits as displayed .....</b>	<b>60-64</b>

† Support or core course(s) fulfill this requirement.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 ‡ AGEC requires 35 credits. This subtotal shows the AGEC credits not fulfilled by core, support, or second language courses.

## Social Services Substance Use Disorder Specialty — Associate of Applied Science Degree for Direct Employment

Learn principles and skills in social work with an emphasis on drug and alcohol treatment and prevention.

### What can I do with this degree?

- Career Options:** Entry-level employment in positions providing substance use disorder services and related community outreach.
- Academic Options:** Students intending to transfer to a four-year university should pursue the Social Services AA degree.
- Location:** West Campus
- Department/Contact Information:**  
 Dean: 520-206-7666  
 Lead Faculty: 520-206-6958  
 Program/Major Codes: **AASSUBSTABUS/SSS**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
SSE 110 fulfills 3 credits in the Social Science category. Complete a course from the Humanities & Fine Arts or Leadership & Ethics category.	
Computer and Information Literacy Requirement .....	1-3
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>16-18‡</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
SSE 110	Introduction to Social Welfare .....	3
SSE 111	Group Work .....	3
SSE 121	Study of Substance Use Disorders .....	3
SSE 123	Prevention of Substance Use Disorders .....	3
SSE 210*	Community Organization and Development .....	3
SSE 211*	Group Technique Applications .....	3
SSE 220	Treatment of Substance Use Disorders .....	3
SSE 222	Political, Legal and Ethical Aspects of Substance Use .....	3
SSE 281*	Social Service Delivery Systems (was SSE 212) .....	3
SSE 285*	Foundations of Social Work Practice (was SSE 202) .....	3
SSE 292*	Social Services Field Experience .....	4
<b>Subtotal .....</b>		<b>34</b>

**Required Support Courses**

SSE 224	Substance Use and Abuse Among Diverse and Special Needs Populations .....	3
Electives .....		7 - 9
Please see an advisor to select appropriate course work.		
<b>Subtotal .....</b>		<b>10-12</b>
<b>Total credits as displayed .....</b>		<b>60-64</b>

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Social Services Substance Use Disorder Specialty — For Transfer

See the Social Services Associate of Arts Degree for Transfer.

Use Program Identification Code: **AOASOCIALSRV**

## Social Services Youth Services Specialty — Associate of Applied Science Degree for Direct Employment

Learn principles and skills in social work with an emphasis on crisis intervention and community services for children.

### What can I do with this degree?

**Career Options:** Entry-level employment in youth services agencies.

**Academic Options:** Students intending to transfer to a four-year university should pursue the Social Services AA degree.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **AASYOUTHSERV/SSY**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
SSE 110 fulfills 3 credits in the Social Science category. Complete a course from the Humanities & Fine Arts or the Leadership & Ethics category.	
Computer and Information Literacy Requirement .....	1-3
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal .....</b>	<b>16-18¥</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

AJS 212	Juvenile Justice Procedures .....	3
ECE 117	Child Growth and Development .....	3
SSE 110	Introduction to Social Welfare .....	3
SSE 111	Group Work .....	3
SSE 146	Child Abuse Intervention and Protection .....	3
SSE 160	Introduction to Youth Services .....	3

SSE 210*	Community Organization and Development .....	3
SSE 211*	Group Technique Applications .....	3
SSE 242	Crisis Intervention, Theory and Techniques .....	3
SSE 285*	Foundations of Social Work Practice (was SSE 202) .....	3
SSE 290*	Youth Services Field Experience .....	4
<b>Subtotal</b> .....		<b>34</b>

**Required Support Courses**

Electives .....	10-12
Please see an advisor to select appropriate course work.	
<b>Subtotal</b> .....	<b>10-12</b>
<b>Total credits as displayed</b> .....	<b>60-64</b>

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.

**Social Services Youth Services Specialty — For Transfer**

See the Social Services Associate of Arts Degree for Transfer.

Use Program Identification Code: **AOASOCIALSRV**

**Basic Social Services Certificate for Direct Employment**

Gain skills and knowledge in dealing with social welfare, service agencies and community groups and the needs of individual clients.

**What can I do with this certificate?**

**Career Options:** Enhance employment and promotion opportunities in industry, business and human services.

**Academic Options:** Pursue other Social Services certificates or a Social Services degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-29/44.0799-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **CRTSOCIALSRV/SSC**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
SSE 110	Introduction to Social Welfare .....	3
SSE 111	Group Work .....	3
SSE 210*	Community Organization and Development .....	3
SSE 211*	Group Technique Applications .....	3
SSE 281*	Social Service Delivery Systems (was SSE 212) .....	3
SSE 285*	Foundations of Social Work Practice (was SSE 202) .....	3
<b>Total credits as displayed</b> .....		<b>18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



## Social Services Substance Use Disorders — Certificate for Direct Employment

Understand drug and alcohol abuse and treatment methods.

### What can I do with this certificate?

**Career Options:** Seek employment or promotion in agencies that provide substance abuse intervention for substance use disorders.

**Academic Options:** Pursue other Social Services certificates or a Social Services degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-30/44.0799-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **CRTSUBSTABUS/SSA**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
SSE 110	Introduction to Social Welfare	3
SSE 121	Study of Substance Use Disorders	3
SSE 123	Prevention of Substance Use Disorders	3
SSE 220*	Treatment of the Substance Use Disorders	3
SSE 222*	Political, Legal and Ethical Aspects of Substance Use	3
SSE 285*	Foundations of Social Work Practice (was SSE 202)	3
<b>Total credits as displayed</b>		<b>18</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

## Social Services Domestic Violence Intervention — Certificate for Direct Employment

Understand the dynamics of domestic violence including crisis intervention and treatment methods.

### What can I do with this certificate?

**Career Options:** Seek employment or promotion in agencies providing domestic violence intervention.

**Academic Options:** Pursue other Social Services certificates or a Social Services degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-27/44.0799-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **CRTDOMESVIOL/SSD**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
SOC 127	Marriage and the Family	3
SSE 110	Introduction to Social Welfare	3
SSE 140	Domestic Violence: Causes and Cures	3
SSE 146	Child Abuse Intervention and Protection	3
SSE 242	Crisis Intervention, Theory and Techniques (was SSE 202)	3
SSE 285*	Foundations of Social Work Practice	3
<b>Total credits as displayed</b>		<b>18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Social Services Community Health Advisor — Certificate for Direct Employment

Learn how to promote health in a community context and provide direct services to clients.

### What can I do with this certificate?

**Career Options:** Seek employment or promotion in health agencies and disease prevention education services.

**Academic Options:** Pursue other Social Services certificates or a Social Services degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-28/44.0799-Gedt.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-7666

Lead Faculty: 520-206-6958

Program/Major Codes: **CRTHEALTHADV/CHA**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
SSE 110	Introduction to Social Welfare .....	3
SSE 170	Community Health Advising .....	3
SSE 205	Case Report Writing .....	3
SSE 293*	Community Health and Development Field Experience .....	4
Social Services Elective: Select one course below for 3 credit hours:		
	SSE 121, 140, 146, 160, or 210* .....	3
<b>Total credits as displayed .....</b>		<b>16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Sociology

## Sociology — Associate of Arts Degree for Transfer

Complete general education requirements to transfer to a college or university while learning the principles of sociology. Students interested in social services should complete a degree or certificate in that discipline.

### What can I do with this degree?

**Career Options:** Apply for an entry-level position in a social agency or non-profit organization.

**Academic Options:** Transfer to a 4-year university to complete a sociology degree.

**Locations:** All campuses

Program/Major Codes: **AOASOCIOLOGY/SOC**

### Arizona General Education Curriculum Requirements (AGEC-A) - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

English Composition .....	6
Humanities and Fine Arts.....	6
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Sciences .....	3
SOC 101 fulfills 3 credits of this requirement. Complete a non-SOC course from this category.	
Other Requirements .....	†
SOC 120 and 201 fulfill this requirement.	
Special Requirements	
SOC 120 fulfills the C and G requirements. The I requirement can be fulfilled by selecting appropriate courses in the above categories	
<b>Subtotal .....</b>	<b>26¥</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

SOC 101	Introduction to Sociology SUN# SOC 1101 .....	3
SOC 120*	Current Social Problems SUN# SOC 2250 .....	3
SOC 127	Marriage and the Family .....	3
SOC 201	Race, Ethnicity, Minority Groups and Social Justice SUN# SOC 2215 .....	3
SOC 204	Gender Identities, Interactions and Relations .....	3

### Sociology Electives

Select three credits from the following courses:

GLS/SOC 110	Introduction to Cities and Global Society
PSY/SOC 215*	Human Sexuality
SOC 130*	Social World of Drugs
SOC 166	Social Gerontology
SOC 296	Independent Study in Sociology

<b>Subtotal .....</b>	<b>18</b>
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### Required Support Courses

Second Language Requirement .....	16
Completion of a language course numbered 202, fourth semester level. (Bilingual or International students should consult an advisor or counselor concerning exceptions to this requirement.) If a student satisfies the language requirement in fewer than 16 credits, additional credit hours of transferable electives must be completed to meet the minimum Associate degree requirement of 60 credit hours.	

<b>Subtotal .....</b>	<b>16</b>
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<b>Total credits as displayed .....</b>	<b>60</b>
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† Core or support course(s) fulfill this requirement.

¥ The AGECE requires 35 credits. This subtotal shows the AGECE credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Therapeutic Massage

## Therapeutic Massage — Certificate for Direct Employment

Learn techniques to alleviate chronic pain, reduce stress, strengthen the immune system, and promote healing through therapeutic massage. Program includes clinical practice in a professional atmosphere and prepares students for the national therapeutic massage and bodywork exam and state licensure.

**Before enrolling in this program, you must meet certain requirements.**

- Be at least eighteen years old.
- Must have a high school diploma or GED.
- Attend a Therapeutic Massage Program orientation session.
- Complete advising session with Therapeutic Massage faculty.
- Submit application form by due date.
- Complete health declaration, immunizations, drug screening and fingerprinting.
- Obtain an Arizona DPS Fingerprint Clearance Card.
- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students must be able to lift, carry, set up and take down massage tables and chairs. The clinical experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting clients' wellness. Students must be able to demonstrate rational and appropriate behavior in day-to-day situations and under stressful conditions. Students will be required to receive massage which results in increased local and systemic circulation, increased venous return, relaxed muscles and overall relaxation. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.
- Present proof of immunization or immunity for MMR/Varicella/Hep-B.
- Show proof of negative TB skin test or negative chest x-ray for TB.
- Pass a urine toxicology screening exam.
- Maintain health insurance and a CPR card at the Health Care Provider Level throughout the program.
- Complete prerequisite coursework with a grade of C or better prior to entry into the Massage Therapy Practice courses.

**What can I do with this certificate?**

**Career Options:** Work as a massage therapist in a variety of wellness, medical and corporate facilities, on cruise ships or as a private practitioner.

**Academic Options:** Continue your studies and earn an associate's degree in therapeutic massage.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-53/51.3503-Gedt.html>

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-6916  
Lead Faculty: 520-206-2263

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

**General Education Requirements A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT101 fulfills this requirement.	
Analysis and Critical Thinking Requirement . . . . .	†
BIO 160IN and MAT 106 fulfill this requirement	
<b>Subtotal</b> . . . . .	<b>†</b>

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
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**Required Core Courses - A grade of C or better is required for graduation.**

BIO 160IN**	Introduction to Human Anatomy and Physiology . . . . .	4
TMA 101	Introduction to Massage Therapy . . . . .	2
TMA 120	Professionalism and Ethics for Massage Therapists . . . . .	2
TMA 201IN*	Therapeutic Massage Practice I . . . . .	6

TMA 202IN*	Therapeutic Massage Practice II .....	6
TMA 202LC*	Therapeutic Massage Practice Clinical Lab I .....	1
TMA 210*	Fundamentals of Kinesiology .....	3
TMA 215*	Introduction to Pathology for Massage and Bodywork .....	3
TMA 222*	Business Management for Massage and Bodywork .....	2
TMA 290LC*	Therapeutic Massage Clinical .....	3
TMA 291*	Therapeutic Massage Internship .....	1
WED 110	Introduction to Complementary and Alternative Medicine .....	3
WED 111	Self Care for Personal Wellness .....	2
<b>Subtotal</b> .....		<b>38</b>

### Required Support Courses

MAT 106***	Elementary Data Analysis with Spreadsheets .....	2
WRT 101*	English Composition I SUN# ENG 1101 .....	3
<b>Subtotal</b> .....		<b>5</b>
<b>Total credits as displayed</b> .....		<b>43</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* BIO 201IN, 201IH, 202IN, 203IN may substitute for BIO 160IN.

\*\*\* Any MAT class 100 or higher may substitute for MAT 106.

## Therapeutic Massage — Associate of Applied Science Degree for Direct Employment

Learn techniques to alleviate chronic pain, reduce stress, strengthen the immune system, and promote healing through therapeutic massage while earning an Associate Degree. Program includes clinical practice in a professional atmosphere and prepares students for the national therapeutic massage and bodywork exam and state licensure.

### Before enrolling in this program, you must meet certain requirements.

- Be at least eighteen years old
- Must have a high school diploma or GED
- Attend a Therapeutic Massage Program orientation session
- Complete advising session with Therapeutic Massage faculty
- Submit application form by due date
- Complete health declaration, immunizations, drug screening and fingerprinting
- Obtain an Arizona DPS Fingerprint Clearance Card.
- Be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students must be able to lift, carry, set up and take down massage tables and chairs. The clinical experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting clients' wellness. Students must be able to demonstrate rational and appropriate behavior in day-to-day situations and under stressful conditions. Students will be required to receive massage which results in increased local and systemic circulation, increased venous return, relaxed muscles and overall relaxation. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.
- Present proof of immunization or immunity for MMR/Varicella/Hep-B.
- Show proof of negative TB skin test or negative chest x-ray for TB.
- Maintain health insurance and a CPR card at the Health Care Provider Level throughout the program.
- Pass a urine toxicology screening exam.
- Complete prerequisite coursework with a grade of C or better prior to entry into the Massage Therapy Practice courses.

### What can I do with this degree?

**Career Options:** Work as a massage therapist in a variety of wellness, medical and corporate facilities.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-6916  
 Lead Faculty: 206-2263

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

**General Education Requirements A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	†
WRT 101 and either WRT 102 or CMN 120 fulfill this requirement.	
Analysis and Critical Thinking Requirement . . . . .	†
BIO 160IN and MAT 106 fulfill this requirement	
Humanities and Social Science Requirement . . . . .	3
(CSA 100 is recommended)	
Computer and Information Literacy . . . . .	1-3
(CSA 100 or 104 is recommended)	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal . . . . .</b>	<b>4-6‡</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

BIO 160IN**	Introduction to Human Anatomy and Physiology . . . . .	4
TMA 101	Introduction to Massage Therapy . . . . .	2
TMA 120	Professionalism and Ethics for Massage Therapists . . . . .	2
TMA 201IN*	Therapeutic Massage Practice I . . . . .	6
TMA 202IN*	Therapeutic Massage Practice II . . . . .	6
TMA 202LC*	Therapeutic Massage Practice Clinical Lab I . . . . .	1
TMA 210*	Fundamentals of Kinesiology . . . . .	3
TMA 215*	Introduction to Pathology for Massage and Bodywork . . . . .	3
TMA 222*	Business Management for Massage and Bodywork Practitioners . . . . .	2
TMA 290LC*	Therapeutic Massage Clinical . . . . .	3
TMA 291*	Therapeutic Massage Internship . . . . .	1
WED 110	Introduction to Complementary and Alternative Medicine . . . . .	3
WED 111	Self Care for Personal Wellness . . . . .	2
<b>Subtotal . . . . .</b>		<b>38</b>

**Required Support Courses**

ACC 100	Practical Accounting Procedures . . . . .	3
MAT 106***	Elementary Data Analysis with Spreadsheets . . . . .	2
MKT 111	Principles of Marketing . . . . .	3
PSY 101	Introduction to Psychology SUN# PSY 1101 . . . . .	4
WRT 101*	English Composition I SUN# ENG 1101 . . . . .	3
WRT 102* or CMN 120	English Composition II SUN# ENG 1102 . . . . . Business and Professional Communication	3
<b>Subtotal . . . . .</b>		<b>18</b>

**Total credits as displayed . . . . . 60-62**

† Core or support course(s) fulfill this requirement  
 ‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.  
 \* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* BIO 201IN, 201IH, 202IN, 203IN may substitute for BIO 160IN.  
 \*\*\* Any MAT class 100 or higher may substitute for MAT 106.



# Translation and Interpretation

## Translation and Interpretation Studies — Certificate for Direct Employment

Improve your skills in Spanish-English and English-Spanish written translation in the health care, legal, literary and business fields. Courses include both hands-on and theoretical classes, as well as internship opportunities.

**Before enrolling in this program**, you must score a minimum of 520 on the Spanish WebCAPE (Computerized Adaptive Placement Test) – see <http://www.perpetualworks.com/webcape/overview>.

### What can I do with this certificate?

**Career Options:** Translate written documents between English and Spanish.

**Academic Options:** Continue your studies by completing the Associate of Applied Science degree.

**More Information:** Important information about the educational debt, earnings, and completion rates of students who attended this program is at <https://www.pima.edu/programs-courses/gainful-employment/2017/ge-19/16.0103-Gedt.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7274

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
TRS 101	Introduction to Translation and Interpretation .....	3
TRS 102	English and Spanish for Translation .....	4
TRS 120IN	Technology for Translation and Interpretation .....	2
TRS 150	Survey of Translation Specialty Areas .....	4
or TRS 203	Consecutive Interpretation and Sight Translation	
TRS 160	Translation in Specialty Areas .....	4
or TRS 270	Simultaneous Interpretation	
TRS 161	Medical Spanish/English Interpreting .....	3
or TRS 162	Introduction to Legal Spanish/English Interpretation	
TRS 202*	Interpretation Techniques .....	3
TRS 282	Advanced Project in Translation .....	4
<b>Total credits as displayed .....</b>		<b>27</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Translation and Interpretation Studies—Associate of Applied Science Degree for Direct Employment

This program is designed to prepare students for entry level employment in translation or interpretation. The Associate of Applied Science degree has course work to develop skills specific to the translation of written documents and the interpretation of oral passages from a source language into a target language. Through a combination of theory and practice, students will gain experience in translating or interpreting in specialty areas such as health care, legal, literary, and business. Students are successful in this program with a minimum score of 520 on the Spanish Computerized Adaptive Placement Exam (SCAPE), see <http://www.perpetualworks.com/webcape/overview>.

### What can I do with this certificate?

**Career Options:** Translate written documents and/or interpret oral passages from a source language into a target language between English and Spanish

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7045

Lead Faculty: 520-206-7274

Program/Major Codes: **AASTRANSLATE/TRI**

**General Education Requirements - A grade of C or better is required for graduation.**

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	†
WRT 101 and 102 or WRT 107 and 108 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	†
ANT 112 and SPA 253 complete this requirement.	
Computer and Information Literacy Requirement .....	†
CSA 100 or CIS/CSA 104 fulfill this requirement.	
Special Requirements	
ANT 112 fulfills this requirement	
<b>Subtotal .....</b>	<b>6‡</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

TRS 101	Introduction to Translation and Interpretation .....	3
TRS 102	English and Spanish for Translation .....	4
TRS 120IN	Technology for Translation and Interpretation .....	2
TRS 150	Survey of Translation Specialty Areas .....	4
or TRS 203	Consecutive Interpretation and Sight Translation	
TRS 160	Translation in Specialty Areas .....	4
or TRS 270	Simultaneous Interpretation	
TRS 161	Medical Spanish/English Interpreting .....	3
or TRS 162	Introduction to Legal Spanish/English Interpretation	
TRS 202*	Interpretation Techniques .....	3
TRS 282	Advanced Project in Translation .....	4
<b>Subtotal .....</b>		<b>27</b>

**Required Support Courses - A grade of C or better is required for graduation.**

ANT 112	Exploring Non-Western Cultures .....	3
CSA 100*	Computer Literacy .....	1-3
or CIS/CSA 104*	Computer Fundamentals	
SPA 103	Beginning Spanish for Heritage and Bilingual Learners .....	4
SPA 203*	Writing and Oral Skills for Heritage and Bilingual Learners .....	4
SPA 253*	Intermediate Spanish for Heritage and Bilingual Learners .....	4
WRT 101*	English Composition I SUN# ENG 1101 .....	3
or WRT 107*	English Composition I for Non-Native Speakers	
WRT 102*	English Composition II SUN# ENG 1102 .....	3
or WRT 108*	English Composition II for Non-Native Speakers	
Electives	Complete 3-5 credits so total credits are at least 60 .....	3-5
<b>Subtotal .....</b>		<b>27</b>
<b>Total credits as displayed .....</b>		<b>60</b>

† Core or support course(s) fulfill this requirement.

‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Truck Driver Training

Become a professional truck driver and prepare for commercial license tests.

## Class A Vehicle Driver — Certificate for Direct Employment

Learn the basics of vehicle operation, commercial driver's license requirements, and driving maneuvers. Classes include driving time.

**Before you enroll you must:** meet admission requirements as outlined by the Truck Driver Training Program

### What can I do with this certificate?

**Career Options:** Driver trainee or co-driver

**Location:** Community Campus

**Department/Contact Information:**

Dean: 520-206-6424

Lead Faculty: 520-206-2744

**Prerequisite(s):** Meet admission requirements as outlined by the Truck Driver Training Program.

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
TDT 118	Basic Vehicle Operations – Class A Commercial Driver's License .....	5
TDT 119*	Basic Driving Maneuvers – Class A Commercial Driver's License .....	3.5
<b>Total credits as displayed .....</b>		<b>8.5</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Coach/Transit Bus Driver — Certificate for Direct Employment

Gain basic knowledge of coach and transit bus driving. Classes include driving time. Complete this program by taking classes exclusively on weekdays, exclusively on evenings/weekends, or in a combination of day, evening and weekend classes.

**Before you enroll you must:** meet admission requirements as outlined by the Truck Driver Training Program

### What can I do with this certificate?

**Career Options:** Coach/Transit Bus driver

**Location:** Community Campus

**Department/Contact Information:**

Division Dean: 520-206-6321

Lead Faculty: 520-206-2744

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed above and have been officially admitted to the program. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
TDT 116	Basic Vehicle Operations - Coach/Transit Bus .....	3
TDT 117	Basic Driving Maneuvers - Coach/Transit Bus .....	3
<b>Total credits as displayed .....</b>		<b>6</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Veterinary Technology

Learn to provide veterinary care to animals and how to work in the front office area of veterinary practices.

## Veterinary Practice Assistant — Certificate of Direct Employment

Learn how to work in the front office area of veterinary practices. This certificate focuses on medical concepts and communication skills in a veterinary practice.

**What can I do with this certificate?**

- Career Options:** Work in the front office area of veterinary practices.
- Academic Options:** Transfer 6 credits of this certificate to the Associate of Applied Science Degree in Veterinary Technology.
- Location:** East Campus
- Department/Contact Information:**  
 Dean: 520-206-6916  
 Lead Faculty: 520-206-7414
- Program/Major Code:** CRTVEP/VEP

Course Number	Course Title	Credit Hours
<b>Required Core Course - A grade of C or better is required for graduation.</b>		
VET 106*	Veterinary Practice Assistant I .....	3
VET 107*	Veterinary Practice Assistant II .....	3
VET 108*‡	Introduction to Veterinary Facility Practices .....	6
<b>Total credits as displayed .....</b>		<b>12</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 ‡ VET 108 with a grade of C or better may be substituted for VET 100 and 225 in the AAS Veterinary Technician Program.

## Veterinary Technician — Associate of Applied Science Degree for Direct Employment

Learn to provide veterinary care to animals, including nutrition, nursing, anesthesiology, radiography and clinical laboratory procedures. Gain practical experience in clinic settings. This program is accredited by the American Veterinary Medical Association.

**Before enrolling in this program,** in addition to the preparatory coursework listed below you must meet certain requirements:

- Meet the requirements for admission as a credit student at Pima Community College.
- Have preparatory coursework completed with the grade of C or higher.
- Have proof of personal medical insurance. Student health insurance is available through Pima. If you are not able to obtain insurance under your parents' or an employer's policy, student insurance coverage may be available to you from various carriers.
- Have proof of immunizations: pre-exposure rabies vaccination series and tetanus toxoid. Proof of tetanus toxoid in the last 8 years. Rabies immunizations will need to be completed while in the program.
- Complete program admissions procedures. Submit a Program Admission Form.
- Be able to meet physical requirements of lifting at least forty pound animals; restraining dogs, cats, exotic animals, horses, cows, birds, etc.; standing for long periods of time; bending and lifting; having manual dexterity to assist in surgery and having ability to communicate with veterinarians and clients. This is a physically demanding occupational field.

### What can I do with this degree?

**Career Options:** Work as a certified veterinary technician for veterinarians, biological research workers, scientists and business or organizations that provide care for animals. After completion of the program, students apply to take state and national board exams for certification.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-6916

Lead Faculty: 520-206-7414

**Special Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below and have been officially admitted to the program. See the website or an advisor for details.

#### Program Prerequisites

REA 091* or Reading assessment placement into REA 112* .....	0-4
MAT 097* or higher, or placement into MAT 151 or higher .....	0-3
<b>Subtotal</b> .....	<b>0-7</b>

#### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	†
The BIO and CHM support courses, and the MAT preparatory coursework or placement fulfill this requirement.	
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	†
CSA 100 fulfills this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b> .....	<b>12†</b>

Course Number	Course Title	Credit Hours
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#### Required Core Courses - A grade of C or better is required for graduation.

VET 100*†	Introduction to Veterinary Technology .....	3
VET 110*	Veterinary Nursing Procedures I .....	3
VET 111*	Veterinary Nursing Procedures II .....	3
VET 120*	Clinical Pathology I .....	3
VET 121*	Clinical Pathology II .....	3
VET 130*	Animal Anatomy and Physiology I .....	4
VET 131*	Animal Anatomy and Physiology II .....	3
VET 150*	Pharmacology .....	3
VET 191*	Veterinary Technician Clinical Experience I .....	3
VET 200*	Anesthetic and Surgical Nursing .....	2
VET 200LB*	Anesthetic and Surgical Nursing Lab .....	1
VET 205*	Radiology and Imaging Techniques .....	2
VET 205LB*	Radiology and Imaging Techniques Lab .....	1
VET 210*	Veterinary Nursing Procedures: Large Animal Care .....	2
VET 211*	Veterinary Nursing Procedures: Avian, Exotic, and Lab Animals .....	2
VET 220*	Clinical Pathology III .....	3
VET 225*†	Veterinary Hospital Procedures .....	3
VET 291*	Veterinary Technician Clinical Experience II .....	3
<b>Subtotal</b> .....		<b>47</b>

<b>Required Support Courses</b>		
BIO 156IN*Δ	Introductory Biology for Allied Health .....	4
or BIO 181IN*Δ	General Biology I: (Majors) SUN# BIO 1181	
CHM 1301IN*Δ	Fundamental Chemistry SUN# CHM 1130 .....	5
or CHM 151IN*Δ	General Chemistry I SUN# CHM 1151	
CSA 100*#	Computer Literacy .....	1
<b>Subtotal .....</b>		<b>10</b>
<b>Total credits as displayed (not including preparatory coursework).....</b>		<b>69</b>
<b>Total credits as displayed (including preparatory coursework) .....</b>		<b>69-76</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 # CIS/CSA 104 may be substituted for CSA 100.  
 † Preparatory coursework, core, or support course(s) fulfill this requirement.  
 ‡ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by preparatory coursework, core, support, or second language courses.  
 ‡ VET 108 with a grade of C or better may be substituted for VET 100 and 225.  
 Δ Biology and Chemistry within the last eight years with a C or better, or met by assessment. If met through assessment, additional electives will be needed to fulfill the General Education Analysis and Critical Thinking Requirement; see advisor for guidance.



# Welding

## Welding and Fabrication— Associate of Applied Science Degree for Direct Employment

Learn various welding and pipe fabrication techniques.

### What can I do with this degree?

**Career Options:** Entry-level employment as a welder.

**Academic Options:** While this program was not designed to transfer to a 4-year university, it may apply toward Bachelor of Applied Science (BAS) or other programs. See Pima's Transfer Partnerships ([www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html](http://www.pima.edu/current-students/transferring-from-pima/transfer-partnerships.html)) page to determine which universities offer BAS programs, and research how the universities may accept this program in transfer.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7159

Program/Major Codes: **AASWELDING/WLD**

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement	6
Analysis and Critical Thinking Requirement	†
GTM 105 and MAC 275 fulfill this requirement.	
Humanities and Social Science Requirement	6
Computer and Information Literacy Requirement	†
CAD 101 fulfills this requirement.	
Special Requirement	
The C or G requirement should be fulfilled by completing an appropriate course in the above categories.	
<b>Subtotal</b>	<b>12¥</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

MAC 275*	Applied Metallurgy	4
WLD 110	Basic Arc and Oxyacetylene Welding	4
WLD 115*	Blueprint Reading/Estimating	4
WLD 160*	Arc Welding	4
WLD 250*	Pipe Welding	4
WLD 261	Gas Metal Arc Welding	4
WLD 262*	Gas Tungsten Arc Welding	4
WLD 263*	Layout and Fabrication Welding	4
<b>Subtotal</b>		<b>32</b>

### Required Support Courses

CAD 101	Computer-Aided Drafting	4
GTM 105*	Applied Technical Mathematics	3
Technical Electives		9
Complete 9 credit hours from the following: BCT, CAD, CSA, MGT, MAC, WLD.		
<b>Subtotal</b>		<b>16</b>
<b>Total credits as displayed</b>		<b>60</b>

† Core or support course(s) fulfill this requirement.

¥ General Education requires 19-21 credits. This subtotal shows the Gen Ed credits not fulfilled by core, support, or second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Educational Courses



# Credit Courses

## Credit Course Numbering System and Prerequisites

Courses numbered from 001-099 are those unique to the community college, are considered developmental in nature, are not anticipated to be transferable, and do not satisfy degree requirements.

Courses numbered 100-199 are considered to be on the freshman level. Courses numbered 200-299 are considered to be on the sophomore level.

**NOTE: SUN System: SUN#** (Shared Unique Number) is a prefix and number assigned to certain courses that represents course equivalency at all Arizona community colleges and the three public universities, no matter what prefix or number is used at the individual institutions. Learn more at <http://www.azsunsystem.com/>

### Sample course listing:

AIS	101	Introduction to American Indian Studies	/3 cr. hrs., /3 periods (3 lec.)	
course prefix	course number	course title	semester hours of credit	hours of lecture and/or lab per week

A student registering for a course must meet the prerequisites or otherwise satisfy the instructor of his or her preparation to take the course. After notification, an instructor may withdraw a student who does not have the proper prerequisites for the class as stated in the catalog. Prerequisites may be waived by the instructor.

**Consult the semester Schedule of Classes for specific offerings each semester.**

## Topics Courses

Courses designated with the numbers **098, 198, 298** are courses created by a Pima Community College faculty member to offer a specific subject not found in the regular courses of the college catalog.

Students should be aware that these courses are NOT designed for transfer to a university, nor does Pima Community College articulate them with any university to seek transfer status.

## Legend for Courses

- HC\*/HN..... Honors Course
- IN/IH ..... Intergrated lecture/lab
- LB ..... Lab
- LC/CA/CB..... Clinical Lab
- LS ..... Skills Lab
- WK ..... Coop Work

\*HC in Spanish Courses stands for Health Care

## Listing of Course Prefixes

Accounting	ACC
Administration of Justice	AJS
Agriculture	AGR
American Indian Studies	AIS
American Sign Language	ASL
Anthropology	ANT
Arabic	ARB
Archaeology	ARC
Art	ART
Art for Personal Development	APD
Astronomy	AST
Automotive Technology	AUT
Aviation Technology	AVM
Avionics Technician Training	ATT
Behavioral Health Services	BHS
Biology	BIO
Building and Construction Technology	BCT
Business	BUS
Chemistry	CHM
Child Development Associate	CDA
Chinese	CHI
Clinical Research Coordinator	CRC
Communication	CMN
Computer-Aided Drafting/Design	CAD
Computer Information Systems	CIS
Computer Software Applications	CSA
Crime Scene Management	CSM
Culinary Arts	CUL
Dance	DNC
Dental Assisting Education	DAE
Dental Hygiene	DHE
Dental Laboratory Technology	DLT
Digital Arts	DAR
Direct Care Professional	DCP
Early Childhood Education	ECE
Economics	ECN
Education	EDU
Education – General/Post Degree	EDC
Education – Special Education	EDS
Education – Special/Post Degree	ESE
Educational Technology Training	ETT
Electrical Utilities Technology	EUT
Emergency Medical Technology	EMT
Engineering	ENG

English as a Second Language	ESL
Environmental Technology	ENV
Fashion Design and Clothing	FDC
Finance	FIN
Fire Science	FSC
Fitness and Sport Sciences	FSS
Fitness and Wellness	FAW
Food Science and Nutrition	FSN
French	FRE
Game Design	GAM
Gender and Women's Studies	GWS
General Technical Writing	GTW
General Technologies Mathematics	GTM
Geography	GEO
Geology	GLG
Geospatial Information Studies	GIS
German	GER
Global Studies	GLS
Health Care	HCA
Health Education	HED
Health Information Technology	HIT
History	HIS
Histotechnology	HTP
Honors Program	HON
Hotel and Restaurant Management	HRM
Human Resources Management	HRS
Humanities	HUM
Industrial and Commercial Technologies	ICT
Industrial Maintenance	IMO
Integrated College Skills	ICS
International Business Studies	IBS
Interpreter Training	ITP
Italian	ITA
Japanese	JPN
Journalism	JRN
Korean	KOR
Landscape Technician	LTP
Law Enforcement	LEN
Law Enforcement Academy	LEA
Library and Information Sciences	LIS
Literature	LIT
Logistics and Supply Chain Management	LGM
Machine Tool Technology	MAC
Management	MGT
Marketing	MKT
Mathematics	MAT
Medical Assistant	MDA
Medical Laboratory Technician	MLT
Mexican-American Studies	MAS
Music	MUS

Music Studio Instruction	MUP
Nursing	NRS
Nursing Assistant	NRA
Office and Administrative Professions	OAP
Optical Science	OPS
Paralegal	PAR
Pharmacy Technology	PHT
Philosophy	PHI
Phlebotomy	PHB
Physics	PHY
Political Science	POS
Professional Flight Technology	PFT
Psychology	PSY
Radiologic Technology	RAD
Reading	REA
Religion	REL
Reserve Officers Training Corps – ROTC Air Force	MLA
Reserve Officers Training Corps – ROTC Army	MLS
Reserve Officers Training Corps – ROTC Navy	NSP
Respiratory Therapy	RTH
Science for Teachers	SCT
Science Summer Career Academy	SCA
Social Services	SSE
Sociology	SOC
Solar Technologies	SLR
Spanish	SPA
Student Success	STU
Technology	TEC
Theater	THE
Therapeutic Massage	TMA
Translation and Interpretation Studies	TRS
Travel and Tourism Operations	TVL
Truck Driver Training	TDT
Veterinary Technology	VET
Welding	WLD
Wellness Education	WED
Writing	WRT



## Accounting

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### ACC 100 Practical Accounting Procedures

3 credit hours, 3 periods (3 lec.)

Introduction to accounting systems for small businesses. Includes different types of accounts, the general journal and general ledger, adjusting entries, closing entries and the post-closing trial balance; bank accounts, cash funds, and internal control; employee earnings and deductions, accounting for cash and payroll, sales and purchases, cash receipts and cash payments, work sheet and adjusting entries; and financial statements, and closing entries.

### ACC 150 Payroll Accounting

3 credit hours, 3 periods (3 lec.)

Current practices in payroll accounting and tax reporting. Includes payroll and personnel records, computing and paying wages and salaries, analyzing and journalizing payroll transactions, and computerized payroll systems and payroll projects.

*Prerequisite(s):* ACC 100 or 211 (or concurrent enrollment in ACC 100 or 211).

### ACC 190 Internship in Accounting

3 credit hours, 9 periods (9 lab)

Supervised internship in an accounting workplace. Includes experiences supervised by a professional in the field.

*Information:* Consent of instructor is required before enrolling in this course.

### ACC 200 Computerized Accounting I

4 credit hours, 4 periods (4 lec.)

Fundamental accounting applications using commercial applications software. Includes commercial accounting program modules, accounting projects, electronic spreadsheet as the accounting tool, and accounting information on the Internet.

*Prerequisite(s):* ACC 100, 150, and 204.

*Information:* Prerequisites may be waived with consent of instructor.

### ACC 204 Individual Tax Accounting

4 credit hours, 4 periods (4 lec.)

Principles of accounting for taxes for individuals. Includes federal tax laws for individuals, gross income, business income and expenses, itemized deductions, tax credits and computations, property transactions, and capital gains and losses. Also includes partnership taxation, corporate income tax, tax administration and planning, and income tax preparation.

*Prerequisite(s):* ACC 100 or 211 (or concurrent enrollment in ACC 100 or 211). Offer: Fall, Spring.

### ACC 211 Financial Accounting

3 credit hours, 3 periods (3 lec.)

Introduction to accounting as a service activity, analytical discipline, and information system. Includes financial statements and the accounting profession, recording accounting and transactional data, merchandising operations, internal control and ethical issues, asset reporting, reporting and analyzing liabilities and stockholder's equity, statements of cash flow, and performance measurement.

*Prerequisite(s):* With a C or better: BUS 151 or MAT 092 or completion of module 26 in MAT 089A or 089B or placement into MAT 097 or higher.

### ACC 212 Managerial Accounting

3 credit hours, 3 periods (3 lec.)

Accounting information for managers. Includes managerial accounting environment, systems design, cost behavior analysis and use, profit planning, standard costs, and decision making.

*Prerequisite(s):* ACC 211 with a C or better.

### ACC 221 Intermediate Accounting I

3 credit hours, 3 periods (3 lec.)

Comprehensive coverage of financial accounting topics. Includes environment of accounting, accounting information system, present value applications to accounting problems, cash control, receivables and investments, inventory valuation methods, tangible fixed assets, current and long-term liabilities, and intangible assets.

*Prerequisite(s):* ACC 211.

**ACC 222 Intermediate Accounting II**

3 credit hours, 3 periods (3 lec.)

Continuation of ACC 221. Includes stockholder's equity, long and short term liabilities, income taxes, pension plans, leases, and accounting changes, statement of cash flow, and full disclosure in financial reporting. Also includes continual integration of theory and practice in the accounting treatment of investments.

*Prerequisite(s):* ACC 221.

**ACC 233 Cost Accounting**

3 credit hours, 3 periods (3 lec.)

Analysis of cost data for management planning, coordination and control. Includes the role of accounting information in management decision making, the cost function, cost-volume-profit analysis, relevant information for decision making, job costing, process costing, and costing methods. Also includes measuring and assigning support department costs, static and flexible budgets, standard costs and variance analysis, and strategic investment decisions.

*Prerequisite(s):* ACC 212.

**ACC 250 Certified Bookkeeper Review**

3 credit hours, 3 periods (3 lec.)

Preparation for the American Institute of Professional Bookkeepers (AIPB) Certified Bookkeeper examination and review of accounting theory and practical bookkeeping skills. Includes the certified bookkeeper program; accruals, deferrals, and the adjusted trial balance; correction of accounting errors and the bank reconciliation; payroll; depreciation; inventory; and internal controls and fraud prevention.

*Prerequisite(s):* ACC 100 or 211.

**ACC 260 Principles of Fraud Examination**

3 credit hours, 3 periods (3 lec.)

Overview of the field of fraud examination and examination methodology and detailed examination of the most prevalent fraud schemes. Includes categories of occupational fraud and abuse, asset misappropriation, corruption schemes, accounting principles and fraud examination strategies, fraudulent financial statement schemes, and interviewing witnesses.

*Prerequisite(s):* ACC 211.

**ACC 273 Governmental Accounting**

3 credit hours, 3 periods (3 lec.)

Accounting practices and procedures used in governmental units. Includes accounting and financial reporting for governmental and not-for-profit entities, operating state accounts, operating activities, general capital assets and projects, general long term liabilities and debt service, business-type activities of state and local governments, fiduciary activities, financial reporting of state and local governments, and accounting for the non-profit sector.

*Prerequisite(s):* ACC 211.

**ACC 281 QuickBooks Computer Accounting**

3 credit hours, 3 periods (3 lec.)

Hands-on experience utilizing current QuickBooks software with accounts receivable, accounts payable, inventory and payroll features to set up and maintain accounting records for a small business.

*Prerequisite(s):* ACC 100, 150, 204, and 211 (or concurrent enrollment in ACC 211).

*Information:* Prerequisite(s) may be waived with consent of instructor.

**ACC 296 Independent Study in Accounting**

.25-1 credit hour, .25-1 periods (.25-1 lec.)

Independent study projects or special interest areas in accounting under the supervision of a faculty member.

*Prerequisite(s):* ACC 100, 150, 204, 211, 212, 200 and 221.

## Administration of Justice

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**AJS 101 Introduction to Administration of Justice Systems**

3 credit hours, 3 periods (3 lec.)

History and philosophy of administration of justice in America. Includes identifying the various subsystems, role expectations, and their interrelationships, theories of crime, punishment and rehabilitation, ethics, education and training for professionalism in the system, and career opportunities related to local criminal justice agencies.

**AJS 109 Criminal Law**

3 credit hours, 3 periods (3 lec.)

Historical development and philosophy of law and constitutional provisions. Includes definitions, classifications of crime and their application to the system of administration of justice, legal research, study of case law, methodology, and concepts of law as a social force.

**AJS 113 Criminal Justice Crime Control Policies and Practices**

3 credit hours, 3 periods (3 lec.)

Focus on changing the distribution of crime opportunities rather than offender motivation. Topics include application of situational crime prevention strategies, problem-oriented crime control approaches, and crime prevention through defensible space.

**AJS 115 Criminal Procedures**

3 credit hours, 3 periods (3 lec.)

Overview of the criminal justice system used in the United States to adjudicate criminal cases. Includes implications for defendant's rights, the arrest process, the prosecuting attorney, the defense attorney, courts, grand jury, trial jury, judicial process, and its aftermath.

**AJS 123 Corrections as a Process**

3 credit hours, 3 periods (3 lec.)

Overview of corrections as a process and its appropriate place in the criminal justice system. Includes the study of inmate characteristics, prison culture, correctional history and philosophies. Also includes community corrections, supervision and career opportunities in corrections.

**AJS 124 Ethics and the Administration of Justice**

3 credit hours, 3 periods (3 lec.)

Exploration of ethical issues and the justice system. Includes elements of moral and ethical behavior, principles of justice, and theories of moral development. Also includes ethics of the police, courts, corrections, and modern issues in the administration of justice.

**AJS 170 Forensic Pathology and Death Investigation**

3 credit hours, 3 periods (3 lec.)

Basic principles of forensic pathology, demonstrating the use of autopsy findings and death scene investigation to determine the cause and manner of death for deaths that fall under the jurisdiction of the medical examiner in the state of Arizona. Includes postmortem changes; sudden and unexpected, suspicious and violent deaths; and postmortem identification.

**AJS 201 Rules of Evidence**

3 credit hours, 3 periods (3 lec.)

The origin, development, philosophy and constitutional basis of evidence. Includes constitutional and procedural considerations affecting arrest and search and seizure. Also includes degrees of evidence and rules governing admissibility, judicial decisions interpreting individual rights, and case studies.

**AJS 204 Criminal Investigations**

3 credit hours, 3 periods (3 lec.)

Fundamentals of modern criminal investigation. Includes procedures and skills in search and investigation, conduct at the crime scene, collection and preservation of evidence, developing sources of information, preparation of cases for court prosecution, and report-writing requirements for administration and court use.

**AJS 210 Police Community and Human Relations**

3 credit hours, 3 periods (3 lec.)

Survey of the police officer's role in attaining and maintaining public support. Includes recognition and understanding of community problems, community action programs, methods of coping with crisis situations, ethnic and minority cultures, various environments, crime prevention, and police operations in relation to these cultures and environments.

**AJS 212 Juvenile Justice Procedures**

3 credit hours, 3 periods (3 lec.)

The course will examine the causes, responses and prevailing legal and social practices concerning delinquency in America. Includes issues pertaining to the family, schools, gang membership, drug use and youth victimization. Also includes the juvenile justice system including the history and philosophy of the juvenile court, court decision-making, sentencing practices, diversion, institutionalization, community supervision and how it interfaces with the administration of justice.

**AJS 225 Criminology**

3 credit hours, 3 periods (3 lec.)

Survey of the nature, extent and control of crime and delinquency. Includes comparison of theoretical and practical approaches to causation, prevention, punishment and treatment, and current problems.



**AJS 246 Race and Ethnicity Issues in the Administration of Justice**

3 credit hours, 3 periods (3 lec.)

The course examines the impact of cultural diversity on law enforcement to include a discussion of cultural awareness, bias, prejudice, training, recruitment and cross cultural communication. Police challenges in engaging with specific racial/ethnic groups are examined, to include Asian/Pacific Americans, African-Americans, Latino/Hispanic Americans, Arab Americans, Native Americans and others. Homeland security concerns, racial profiling and hate crimes are also addressed.

**AJS 260 Criminal Justice Management**

3 credit hours, 3 periods (3 lec.)

A practical examination of the challenges of criminal justice management. Includes unique requirements for these agencies and departments, as differentiated from non-governmental organizations; management theories as applied to criminal justice agencies; effective communication, leadership styles, budgets, decision making, and model management practices. Also includes special problems such as managing difficult or unethical employees; use of force issues; sexual and gender harassment; and work force issues including recruitment, retention, diversity, and training.

*Information:* Consent of instructor required before enrolling in this course.

**AJS 280 Terrorism in the 21st Century**

3 credit hours, 3 periods (3 lec.)

Exploration into the definition, history, cause, and goals of terrorism. Includes identification of terrorists and their motivations and examination of tactics used by terrorists in pursuit of their goals. Also includes methods used to combat terrorism including intelligence collection, security measures, diplomacy, legal and political responses.

## Agriculture

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**AGR 101 Introduction to Agriculture Science**

3 credit hours, 3 periods (3 lec.)

Overview of topics, careers and practices in agriculture science. Includes food safety, biotechnology, and environmental and natural resources sciences. Also includes ethics, nutrition and disease as they relate to the agricultural sciences.

**AGR 185 Careers in Crop Production**

1 credit hour, 1 periods (1 lec.)

Exploration of career opportunities in crop production. Includes exposure to a broad array of relevant careers working with field crops, permanent tree crop production, turf science, and a variety of horticultural crops grown throughout the western United States and other regions of the world. Also includes career management; and preparation of a resume, cover letter, and internship proposal.

**AGR 200IN Introduction to Soil Science**

4 credit hours, 6 periods (3 lec., 3 lab)

Basic principles of soil as a component of terrestrial ecosystems. Includes the composition of soil and its operation within the overall biosphere. Also includes soil as a medium for plant growth in croplands, rangelands, and forest lands. Also includes the role of soils in environmental quality, health, water resources, erosion, recreation, and wildlife.

*Prerequisite(s):* CHM151IN

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

## American Indian Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**AIS 101 Introduction to American Indian Studies I**

3 credit hours, 3 periods (3 lec.)

Examination of the diversity of American Indian tribes. Includes origins and traditions, Native American cultures and geographic subsistence, women's roles and responsibilities, spirituality and world views, and values and value systems. Also includes early education, socialization, and importance of extended family, history of tribal sovereignty and governance, health and curing, and encounters and reactions with early Europeans.

**AIS 122 Tohono O'odham History and Culture**

3 credit hours, 3 periods (3 lec.)

Survey of Tohono O'odham culture, historical development, and modern issues. Includes development of culture and world view, sources of Tohono O'odham history, role in economic and social development of Northwestern Mexico and Southwestern United States, and contemporary Tohono O'odham issues.

*Information: Same as HIS 122.*

**AIS 124 History and Culture of the Yaqui People**

3 credit hours, 3 periods (3 lec.)

Survey of the cultural heritage of the Yaqui people and the history of their struggles to protect Yaqui land and customs. Includes Yaqui origins, pre-Columbian Yaqui society, oral traditions and world view, early Spanish contacts, Catholic influences, economic development; rebellions, resistance and leadership; and policies regarding Native Americans. Also includes the deportation and enslavement of the Yaqui from the 17th to the 20th centuries by the Spanish and American governments and the deportation of the Yaqui by the United States in the 1880's. Also examines acts of genocide and subjugation against the Yaqui in revolutionary Mexico, 20th century relocation and adaptation strategies of the Yaqui in the United States and the Yaqui culture of the 21st century.

*Information: Same as HIS 124.*

**AIS 148 History of Indians of North America**

3 credit hours, 3 periods (3 lec.)

History of the cultural development of Native Americans of North America and the interrelations of cultures. Includes Native American origins, early economic and social development, Europeans, eras in Native American history, modern leadership, and research studies.

*Information: Same as ANT/HIS 148.*

**AIS 205 Introduction to Southwestern Prehistory**

3 credit hours, 3 periods (3 lec.)

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. Includes anthropology and its subfields, basics of archaeology, the Southwest, Paleoindians, archaic peoples; Hohokam, Mogollon, Anasazi, and other Southwestern cultures; and late prehistoric and historic cultural change.

*Information: Same as ANT/ARC 205.*

**AIS 206 Contemporary Native Americans of the Southwest**

3 credit hours, 3 periods (3 lec.)

Survey of Native American cultures with emphasis on peoples of the Southwestern United States and northern Mexico. Includes overview of Native groups in the Southwestern United States and northern Mexico, environmental zones and modes of production, cultural and linguistic diversity, cultural configurations, Pan- Native American issues, and frameworks for understanding Native American culture and experience.

*Information: Same as ANT 206.*

## American Sign Language

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ASL 050 Conversational Sign Language I**

3 credit hours, 3 periods (3 lec.)

Introduction to conversational sign language skills. Includes basic sign vocabulary, d/Deaf culture, and an overview of communications systems.

**ASL 101 American Sign Language I**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to American Sign Language (ASL). Includes: parameters; syntax; sentence types; facial expressions and body language; pronominalization; nouns and verbs; modals; sign space; time line and time modulations; classifiers; pluralizations; and deaf history and culture. Also includes: finger-spelling numbers; lexicalized finger-spelling; conceptual accuracy; sign modulation; conversational regulators; basic compounds and contractions; and existence of regional dialects/sign and language variations. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

*Information: Students will be required to perform an additional 10 lab hours outside of the regular classroom schedule. This lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; and provide students with real life exposure to the Deaf community.*

*Information: This class is conducted primarily without voice.*

**ASL 102 American Sign Language II**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of ASL 101. Includes: parameters; syntax; sentence types; facial expression and body language; sign space; pronominalization; nouns/verbs; time line; classifiers; pluralizations; deaf culture; and finger-spelling numbers. Also includes conceptual accuracy, modulations, sight line, lexicalized finger-spelling, contractions, direct address, conjunctions, model stories, history of sign, language variations, sign continuum, and how people hear. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

*Prerequisite(s):* ASL 101 with a grade of C or better.

*Information:* Students will be required to perform an additional 10 lab hours outside of the regular classroom schedule. This lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; and provide students with real life exposure to the Deaf community.

*Information:* This class is conducted primarily without voice.

**ASL 105 Beginning Finger-spelling and Numbers**

3 credit hours, 3 periods (3 lec.)

Enhancement of receptive and expressive ASL skills with a focus on finger-spelling and numbers. Also includes practice in specific skills that underlie the finger-spelled word recognition process. Also includes contextual practice for correctly recognizing and producing finger-spelled and numbered words.

*Prerequisite(s):* ASL 102.

*Information:* Additional lab hours are required outside of regularly scheduled class.

**ASL 200 Introduction to the Deaf Community**

3 credit hours, 3 periods (3 lec.)

Macroscopic view of culture and microscopic view of the Deaf life experience through culture and language. Includes cross-cultural interactions between deaf and hearing people. Also includes the history of the Deaf community, Deaf education, Deaf technologies, Deaf employment, historical trends and Deaf services.

*Prerequisite(s):* ASL 201 with a grade of B or better.

**ASL 201 American Sign Language III**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of ASL 102. Includes sentence order, modulation/inflection, prosody, sign space usage, conceptual accuracy, sign vocabulary, and deaf culture and history. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

*Prerequisite(s):* ASL 102 with a grade of C or better.

*Information:* Students will be required to perform an additional ten lab hours outside of regular classroom schedule. The lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; provide students with real life exposure to the Deaf community. *Information:* This class is conducted primarily without voice.

**ASL 202 American Sign Language IV**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of ASL 201. Includes: use of sign space; conceptual accuracy; directionality; mimetic description; dialects; numerical applications; American Sign Language (ASL) expansions; English words with no direct ASL translation; English passive voice to ASL active voice; rendering ASL and English passages; current cultural issues; and the field of interpreting. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

*Prerequisite(s):* ASL 201 with a grade of C or better.

*Information:* Students will be required to perform an additional ten lab hours outside of regular classroom schedule. The lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; provide students with real life exposure to the Deaf community. *Information:* This class is conducted primarily without voice.

**ASL 203 Comparative Analysis of ASL and English**

3 credit hours, 3 periods (3 lec.)

Enhanced study of the fundamental principles and cognitive processing of American Sign Language. Includes a further study of the Deaf community and Deaf culture.

*Prerequisite(s):* ASL 201 with a grade of B or better, and WRT 102.

*Information:* This course is recommended for students who have finished ASL 202 or ASL departmental approval and desire further study and review. Students may be expected to attend outside events at their own expense.

**ASL 204 Discourse Features in ASL**

3 credit hours, 3 periods (3 lec.)

This course is an overview of ASL discourse. Includes discourse structure, language, variation, genre, register, prosody, cohesion, take-turning, back-channeling and gendered communication. Also includes transcription conventions for noting language samples.

*Prerequisite(s): ASL 202 with a grade of B or better*

**ASL 205 Advanced Finger-spelling and Numbers**

3 credit hours, 3 periods (3 lec.)

Continued enhancement of both receptive and expressive ASL skills with a focus on finger-spelling and numbers. Includes improved finger-spelled word recognition and expression by providing theoretical information, practice in specific skills that underlie the finger-spelled word recognition process. Also includes practice in correctly recognizing and producing finger-spelled words in context.

*Prerequisite(s): ASL 202 with a grade of B or higher.*

**ASL 206 American Sign Language V**

4 credit hours, 6 periods (3 lec., 3 lab)

Development of ASL receptive and expressive fluency. Also includes understanding the linguistic features of ASL and in enhancing understanding of deaf community and culture.

*Prerequisite(s): ASL 202 with a grade of C or higher*

**ASL 215 ASL Literature: Narratives**

3 credit hours, 3 periods (3 lec.)

This course is a continuation of the major grammatical features of American Sign Language (ASL) to develop communicative and interactive competencies in the culture and language of the Deaf. Includes a focus on ASL literature by introducing students to ASL storytelling techniques, film analysis, story analysis, and its techniques. Also includes ASL narratives, classifiers and perspectives.

*Prerequisite(s): ASL 200 and 202 with a grade of B or better.*

*Information: This course is taught in ASL and utilizes receptive skills through ASL literature and media. Students are expected to experiment with ASL storytelling and the use of classifier techniques. Information: Additional hours may be required outside of the regularly scheduled class.*

**ASL 296 Independent Study in Sign Language**

1-3 credit hours, 3-9 periods (3-9 lab)

Exploration of special interest areas in sign language and deaf cultures. Includes extensive practice of sign language skills and in depth study of deaf cultures involving literature, grammar, and special projects under the supervision of the instructor.

*Prerequisite(s): ASL 102.*

*Information: Student must have consent of instructor.*

## Anthropology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ANT 101 Human Origins and Prehistory**

3 credit hours, 3 periods (3 lec.)

Survey of physical anthropology and archaeology. Includes anthropology and its subfields, the development of evolutionary theory, modern human variation, primates, paleoanthropology and archaeology, and the emergence of the human species from its origins.

*Information: Same as ARC 101.*

**ANT 102 Introduction to Cultural Anthropology and Linguistics**

3 credit hours, 3 periods (3 lec.)

Survey of human societal structure. Includes sub-fields of anthropology, sub-disciplines and topics, historical origins, influences, key figures, theory and methods. Also includes an introduction to the comparative study of cultures.

**ANT 105 Humanity and the Environment**

3 credit hours, 3 periods (3 lec.)

*xCorequisite(s): ANT 105LB*

*Information: Same as ENV 105.*

**ANT 105LB Humanity and the Environment Discovery Laboratory**

1 credit hour, 3 periods (3 lab)

Laboratory exercise and field trip experiences as applied to the relationship between humanity and the environment. Includes examining ecology and biodiversity, healthy- carrying capacity models, and waste by-product and their sources. Also includes designing pollution prevention and sustainable campus/town models, developing increased environmental ethics in relationships to the environment.

*Corequisite(s):* ANT 105

*Information:* This laboratory course satisfies the fourth credit hour of the Biological and Physical Science general education transfer credit if taken along with ANT 105. *Information:* Same as ENV 105LB.

**ANT 110 Buried Cities and Lost Tribes**

3 credit hours, 3 periods (3 lec.)

Exploration of the human past. Includes anthropology and its subfields, basics of archaeology, modern humans, origins of domestication, development of social complexity, ranked societies, and states around the world, and archaeology in the modern world.

*Information:* Same as ARC 110.

**ANT 112 Exploring Non-Western Cultures**

3 credit hours, 3 periods (3 lec.)

Anthropological survey of non-Western cultures. Includes history and development of cultural anthropology, research methods, and relevant theories of the field. Also includes major cultural characteristics of pre-colonial, non-Western, subsistence cultures; making cross-cultural comparisons and contrasts with the post-colonial era; and considering a global context.

*Information:* Course meets the AGEC Special Requirements of "I" (Intensive Writing), "C" (Cultural Diversity) and "G" (Global Awareness). Students will have writing assignments that require college level skills, and writing quality will be graded.

**ANT 127 History and Culture of the Mexican-American in the Southwest**

3 credit hours, 3 periods (3 lec.)

Historical survey of Mexicano(a)/Chicano(a) people from their indigenous origins in Meso-America and the Gran Chichimeca to the present in the United States. Includes historical writings, movements north under Spain and Mexico, repression and resistance. Also covers the political, economic, religious and social movements of the 19th, 20th and early 21st centuries.

*Information:* Same as HIS 127 and MAS 127.

**ANT 136 Body and Art**

3 credit hours, 3 periods (3 lec.)

A visual cultural exploration of how humans utilize the body as a vehicle for communicating and displaying personal and group identities. Includes anthropological and art historical study of types of permanent and temporary body decorations, masks, and performance and the ethical issues surrounding the study and use of imagery within and between cultures. Also includes the conceptual examination of global examples and an overview of practical projects to demonstrate the continued vitality of each mode of expression.

*Information:* Same as ART 136.

**ANT 148 History of Indians of North America**

3 credit hours, 3 periods (3 lec.)

History of the cultural development of Native Americans of North America and the interrelations of cultures. Includes Native American origins, early economic and social development, Europeans, eras in Native American history, modern leadership, and research studies.

*Information:* Same as AIS/HIS 148.

**ANT 180 Artifact Identification: Tucson Basin**

1 credit hour, 2 periods (.5 lec., 1.5 lab)

Introduction to the recognition, identification, and classification of the various types of artifacts recovered from local archaeological sites. Includes an overview of prehistoric ceramics in the Tucson Basin, flaked stone technology, ground stone tool identification, animal bone, marine shell artifacts and historical artifacts.

*Information:* Same as ARC 180.

**ANT 181 Global Positioning Systems Basics**

1 credit hour, 1 periods (1 lec.)

Introduction to the use of Global Positioning Systems (GPS) receivers in a field setting for non-technical applications. Includes GPS vocabulary, operation, field data collection and data transfer. Also includes using equipment, resources and facilities of the Archaeology Centre.

*Information: Same as ARC/GIS 181.*

**ANT 202 Sexuality, Gender and Culture**

3 credit hours, 3 periods (3 lec.)

Anthropological examination of gender identity, roles, relations, and variation. Includes theories and methods of the anthropology of sex and gender, historical origins and development of the sub-discipline, and sex, gender and sexuality in cross-cultural, ethnographic perspective. Also includes selected case studies and cross-cultural frameworks for analysis.

*Information: Same as GWS 202.*

**ANT 204IN Human Evolution: Ape Men, Cave Women and Missing Links**

4 credit hours, 5 periods (3 lec., 2 lab)

Study of human evolution and variation. Includes fossil evidence, environmental and cultural change, primate anatomy and behavior, human genetics, human biology and biocultural interactions. Also includes the use of museum collections, equipment, resources, and facilities of the Archaeology Centre.

*Information: Same as ARC 204IN.*

**ANT 205 Introduction to Southwestern Prehistory**

3 credit hours, 3 periods (3 lec.)

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. Includes anthropology and its subfields, basics of archaeology, the Southwest, Paleoindians, archaic peoples; Hohokam, Mogollon, Anasazi, and other Southwestern cultures; and late prehistoric and historic cultural change.

*Information: Same as AIS/ARC 205.*

**ANT 206 Contemporary Native Americans of the Southwest**

3 credit hours, 3 periods (3 lec.)

Survey of Native American cultures with emphasis on peoples of the Southwestern United States and Northern Mexico. Includes overview of Native groups in the Southwestern United States and northern Mexico, environmental zones and modes of production, cultural and linguistic diversity, cultural configurations, Pan- Native American issues, and frameworks for understanding Native American culture and experience.

*Information: Same as AIS 206.*

**ANT 210 Cultural Anthropology**

3 credit hours, 3 periods (3 lec.)

Exploration of the study of culture. Includes scientific and humanistic legacies of cultural anthropology, effects of paradigms on research focus and findings, survey of models for analysis, ethnographic studies, and evaluation of models and styles in anthropology.

*Prerequisite(s): ANT 102.*

**ANT 215 The Nature of Language**

3 credit hours, 3 periods (3 lec.)

Introduction to anthropological linguistics. Includes the history of linguistics, descriptive linguistics, sociolinguistics, language and culture, and language and biology. Also includes language acquisition, language and education, and the history of language and writing.

**ANT 225 Principles of Archaeology**

3 credit hours, 4 periods (2.5 lec., 1.5 lab)

Survey of the concepts and methods which archaeologists use to reconstruct human prehistory. Includes a history of archaeology; overview of theory in archaeological method and techniques of archaeological excavation; remote sensing, surveying, and mapping; dating methods; archaeological analysis and classification; interpretation of archaeological data; and the role of archaeology in cultural heritage protection and management. Also includes using museum collections, equipment, resources, and facilities of the Archaeology Centre.

*Prerequisite(s): ANT/ARC 101 or 110 or 205 or 275 or 276.*

*Information: Prerequisite(s) may be waived with consent of instructor. Information: Same as ARC 225.*



**ANT 250 Archaeology Laboratory**

4 credit hours, 6 periods (3 lec., 3 lab)

Laboratory experience in the curating, processing and analysis of artifacts recovered from archaeological sites. Includes human osteology, zooarchaeology, lithic analysis, prehistoric ceramics, shells, historic artifacts, and usage of the Archaeology Centre.

*Prerequisite(s):* ANT/ARC 180 or 275 or 276.

*Information:* Prerequisite(s) may be waived with consent of instructor. Same as ARC 250. If this course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**ANT 253 Death and Dying Across Cultures**

3 credit hours, 3 periods (3 lec.)

Introduction to death and dying in various cultures. Includes developmental aspects of death and grieving, world view, near-death experience, cultural views of the dying process, ethical issues in death across cultures, socio-political implications in the treatment of dead bodies, disposition of the corpse, and grieving and bereavement.

**ANT 265 Mapping Concepts**

1 credit hour, 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

*Information:* Same as ARC/GEO/GIS 265.

**ANT 267 Introduction to Geographic Information Systems**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems (GIS). Includes the evolution of the technology, applications, benefits and costs, characteristics of geographic data, data types, database concepts, and operations and functionality. Also includes hardware, software, implementation, legal issues, and the future of geographic information systems.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Prerequisite may be waived with consent of instructor. Basic computer skills are required before enrolling in this course. Same as ARC/GEO/GIS 267.

**ANT 275 Archaeological Excavation I**

4 credit hours, 8 periods (2 lec., 6 lab)

Introduction to the techniques of archaeological mapping, excavation and recording. Includes field experience in southern Arizona. Also includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

*Information:* Same as ARC 275.

**ANT 276 Archaeological Surveying I**

4 credit hours, 8 periods (2 lec., 6 lab)

Techniques and methods for recognizing, locating and recording archaeological sites. Includes exploration methods, issues of cultural resource management, instrument skills, map use, and remote sensing applications. Also includes natural resources associated with archaeological sites, application of field techniques, and documentation.

*Recommendation:* Completion of or concurrent enrollment in ANT/ARC 180.

*Information:* Same as ARC 276.

**ANT 277 Archaeological Excavation II**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of ANT/ARC 275. Includes advanced excavation techniques, field crew supervision, and selected field projects. Also includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

*Prerequisite(s):* ANT/ARC 275.

*Recommendation:* Completion of (or concurrent enrollment in): AIS/ANT/ARC 205 and ANT/ARC/GIS 265. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* Same as ARC 277.

**ANT 278 Archaeological Surveying II**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of ANT/ARC 276. Includes goals and objectives of archaeological exploration, archival investigation, planning field projects, and computer resources.

*Prerequisite(s):* ANT/ARC 276.

*Recommendation:* Completion of (or concurrent enrollment in): AIS/ANT/ARC 205 and ANT/ARC/GIS 265. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* Same as ARC 278. Consult instructor for alternative prerequisite(s).

**ANT 281 Global Positioning Systems**

1 credit hour, 3 periods (3 lab)

Introduction to the technical use of Global Positioning Systems (GPS) receivers in a field setting. Includes review of GPS vocabulary and concepts, comprehensive initialization of hand-held GPS receivers, data collection with hand-held GPS, the use of mapping software with data from hand-held GPS, concepts of differential GPS, operation of and field data collection with static and RTK precision GPS, use of software packages for differential correction and map production. Also includes using equipment, resources and facilities of the Archaeology Center.

*Prerequisite(s):* ANT/ARC/GIS 181.

*Information:* Prerequisite may be waived with equivalent experience or consent of instructor. Same as ARC/GIS 281.

**ANT 284 Computer Cartography and CAD**

3 credit hours, 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to: methods and techniques, and application projects.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Same as ARC/GIS 284.

**ANT 286 Electronic and Digital Field Mapping**

4 credit hours, 8 periods (2 lec., 6 lab)

Overview of the creation of electronic and digital maps in a field setting. Includes an introduction to: instrument operation, field data, producing maps, and computer applications.

*Prerequisite(s):* ANT/ARC 265 and ANT/ARC/GIS 281.

*Recommendation:* Consult instructor for alternative prerequisite(s).

*Information:* Same as ARC/GIS 286.

**ANT 295 Field Projects**

.5-4 credit hours, 1.5-12 periods (1.5-12 lab)

Participation in a field project in one of the subfields of anthropology.

*Information:* Same as ARC 295. *Information:* Consent of instructor is required before enrolling in this course.

**ANT 296 Independent Studies in ANT/ARC**

.5-4 credit hours, .5-4 periods (.5-4 lec.)

Independent study in anthropology or archaeology. Includes topic identification, research plan, data gathering, and presentation of findings.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of 12 credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. Same as ARC 296.

## Arabic

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ARB 101 Elementary Modern Standard Arabic I**

5 credit hours, 5 periods (5 lec.)

Introduction to modern standard Arabic language. Includes modern standard Arabic alphabet, grammatical structures, interpersonal transactions, and cultural contexts. Also includes speaking, listening, reading, and writing of Arabic.

**ARB 102 Elementary Modern Standard Arabic II**

5 credit hours, 5 periods (5 lec.)

Continuation of ARB 101. Includes additional uses of Modern Standard Arabic alphabet, grammatical structures interpersonal transactions and protocols, and cultural contexts. Also includes additional speaking, listening, reading, and writing of Arabic.

*Prerequisite(s):* ARB 101.

## Archaeology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### ARC 060 Artifacts and Sites of Tucson

.5 credit hours, .5 periods (.5 lec.)

Overview of the artifacts and archaeological sites of the Tucson Basin. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

*Information: Field trip is part of the course.*

### ARC 062 Stone Tool Making

.5 credit hours, .5 periods (.5 lec.)

Introduction to the production of chipped stone tools. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

### ARC 093 Archaeology Workshop

.5-3 credit hours, .5-3 periods (.5-3 lec.)

Workshop with an emphasis on field and lab techniques. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre or equivalent.

### ARC 101 Human Origins and Prehistory

3 credit hours, 3 periods (3 lec.)

Survey of physical anthropology and archaeology. Includes anthropology and its subfields, the development of evolutionary theory, modern human variation, primates, paleoanthropology and archaeology, and the emergence of the human species from its origins.

*Information: Same as ANT 101.*

### ARC 110 Buried Cities and Lost Tribes

3 credit hours, 3 periods (3 lec.)

Exploration of the human past. Includes anthropology and its subfields, basics of archaeology, modern humans, origins of domestication, development of social complexity, ranked societies, and states around the world, and archaeology in the modern world.

*Information: Same as ANT 110.*

### ARC 180 Artifact Identification:Tucson

1 credit hour, 2 periods (.5 lec., 1.5 lab)

Artifact Identification: Tucson Basin Introduction to the recognition, identification, and classification of the various types of artifacts recovered from local archaeological sites. Includes an overview of prehistoric ceramics in the Tucson Basin, flaked stone technology, ground stone tool identification, animal bone, marine shell artifacts and historical artifacts.

*Information: Same as ANT 180.*

### ARC 181 Global Positioning Systems Basics

1 credit hour, 1 periods (1 lec.)

Introduction to the use of Global Positioning Systems (GPS) receivers in a field setting for non-technical applications. Includes GPS vocabulary, operation, field data collection and data transfer. Also includes using equipment, resources and facilities of the Archaeology Centre.

*Information: Same as ANT/GIS 181.*

### ARC 204IN Human Evolution: Ape Men, Cave Women and Missing Links

4 credit hours, 5 periods (3 lec., 2 lab)

Study of human evolution and variation. Includes fossil evidence, environmental and cultural change, primate anatomy and behavior, human genetics, human biology and biocultural interactions. Also includes the use of museum collections, equipment, resources, and facilities of the Archaeology Centre.

*Information: Same as ANT 204IN.*

### ARC 205 Introduction to Southwestern Prehistory

3 credit hours, 3 periods (3 lec.)

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. Includes anthropology and its subfields, basics of archaeology, the Southwest, Paleoindians, archaic peoples; Hohokam, Mogollon, Anasazi, and other Southwestern cultures; and late prehistoric and historic cultural change.

*Information: Same as AIS/ANT 205.*

**ARC 225 Principles of Archaeology**

3 credit hours, 4 periods (2.5 lec., 1.5 lab)

Survey of the concepts and methods which archaeologists use to reconstruct human prehistory. Includes a history of archaeology; overview of theory in archaeological method and techniques of archaeological excavation; remote sensing, surveying, and mapping; dating methods; archaeological analysis and classification; interpretation of archaeological data; and the role of archaeology in cultural heritage protection and management. Also includes using museum collections, equipment, resources, and facilities of the Archaeology Centre.

*Prerequisite(s):* ANT/ARC 101 or 110 or 205 or 275 or 276.

*Information:* Prerequisite(s) may be waived with consent of instructor. Same as ANT 225.

**ARC 250 Archaeology Laboratory**

4 credit hours, 6 periods (3 lec., 3 lab)

Laboratory experience in the curating, processing and analysis of artifacts recovered from archaeological sites. Includes human osteology, zooarchaeology, lithic analysis, prehistoric ceramics, shells, historic artifacts, and usage of the Archaeology Centre.

*Prerequisite(s):* ANT/ARC 180 or 275 or 276.

*Information:* Prerequisite(s) may be waived with consent of instructor. Same as ANT 250. If this course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**ARC 265 Mapping Concepts**

1 credit hour, 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

*Information:* Same as ANT/GEO/GIS 265.

**ARC 267 Introduction to Geographic Information Systems**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems (GIS). Includes the evolution of the technology, applications, benefits and costs, characteristics of geographic data, data types, database concepts, and operations and functionality. Also includes hardware, software, implementation, legal issues, and the future of geographic information systems.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Prerequisite may be waived with consent of instructor. Basic computer skills are required before enrolling in this course. Same as ANT/GEO/GIS 267.

**ARC 275 Archaeological Excavation I**

4 credit hours, 8 periods (2 lec., 6 lab)

Introduction to the techniques of archaeological mapping, excavation and recording. Includes field experience in southern Arizona. Also includes using museum collections, equipment, resources and facilities of the Archaeological Centre.

*Information:* Same as ANT 275.

**ARC 276 Archaeological Surveying I**

4 credit hours, 8 periods (2 lec., 6 lab)

Techniques and methods for recognizing, locating and recording archaeological sites. Includes exploration methods, issues of cultural resource management, instrument skills, map use, and remote sensing application. Also includes natural resources associated with archaeological sites, application of field techniques, and documentation.

*Recommendation:* Completion of or concurrent enrollment in ANT/ARC 180.

*Information:* Same as ANT 276.

**ARC 277 Archaeological Excavation II**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of ARC/ANT 275. Includes advanced excavation techniques, field crew supervision, and selected field projects. Also includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

*Prerequisite(s):* ANT/ARC 275.

*Recommendation:* Completion of (or concurrent enrollment in): AIS/ANT/ARC 205 and ANT/ARC/GIS 265. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* Same as ANT 277.

**ARC 278 Archaeological Surveying II**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of ARC/ANT 276. Includes goals and objectives of archaeological exploration, archival investigation, planning field projects, and computer resources.

*Prerequisite(s):* ANT/ARC 276.

*Recommendation:* Completion of (or concurrent enrollment in): AIS/ANT/ARC 205 and ANT/ARC/GIS 265. If any recommended course is taken, see a financial aid Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* Same as ANT 278. Consult instructor for alternative prerequisite(s).

**ARC 281 Global Positioning Systems**

1 credit hour, 3 periods (3 lab)

Introduction to the technical use of Global Positioning Systems (GPS) receivers in a field setting. Includes review of GPS vocabulary and concepts, comprehensive initialization of hand-held GPS receivers, data collection with hand-held GPS, the use of mapping software with data from hand-held GPS, concepts of differential GPS, operation of and field data collection with static and RTK precision GPS, use of software packages for differential correction and map production. Also includes using equipment, resources and facilities of the Archaeology Center.

*Prerequisite(s):* ANT/ARC/GIS 181.

*Information:* Prerequisite(s) may be waived with equivalent experience or consent of instructor. Same as ANT/GIS 281.

**ARC 284 Computer Cartography and CAD**

3 credit hours, 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to: methods and techniques, and application projects.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Same as ANT/GIS 284.

**ARC 286 Electronic and Digital Field Mapping**

4 credit hours, 8 periods (2 lec., 6 lab)

Overview of the creation of electronic and digital maps in a field setting. Includes an introduction to: instrument operation, field data, producing maps, and computer applications.

*Prerequisite(s):* ANT/ARC 265 and ANT/ARC/GIS 281.

*Recommendation:* Consult instructor for alternative prerequisite(s).

*Information:* Same as ANT/GIS 286.

**ARC 295 Field Projects**

.5-4 credit hours, 1.5-12 periods (1.5-12 lab)

Participation in a field project in one of the subfields of anthropology.

*Information:* Same as ANT 295. *Information:* Consent of instructor is required before enrolling in this course.

**ARC 296 Independent Studies in ANT/ARC**

.5-4 credit hours, .5-4 periods (.5-4 lec.)

Independent study in anthropology or archaeology. Includes topic identification, research plan, data gathering, and presentation of findings.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of 12 credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. Same as ANT 296.

## Art

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ART 100 Basic Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the elements and principles of visual design. Includes identifying and interpreting creative problems; emphasizing art and design skills; writing reviews of gallery visits/museum visits/artist lectures; articulating and demonstrating progressive skills in their own work; participating in individual and group critiques; and relating their work on a conceptual, interpersonal and global level.

**ART 105 Exploring Art and Visual Culture**

3 credit hours, 3 periods (3 lec.)

Exploration of historical and contemporary art and the visual image within the context of culture. Includes selective perception; formal analysis; materials and techniques; art in a historical framework; visual culture; meaning and value in art and visual culture; and high and low culture art. Also includes contemporary issues; traditional and contemporary themes in art; museums, galleries, and public spaces; and process, form, and content in making art.

**ART 106 Survey of Painting Materials and Techniques**

3 credit hours, 5 periods (2 lec., 3 lab)

Technical and theoretical investigation of the most prominent painting methods from Ancient Greece to the present. Includes materials used in painting, the Fresco, Encaustic, Glair, Egg Tempera, the Indirect and Direct Oil, and Watercolor Techniques.

**ART 109 Watercolor Painting**

3 credit hours, 5 periods (2 lec., 3 lab)

Introductory course in watercolor painting that explores basic materials, techniques, and development of students' personal style. Includes compositional elements, materials and tools, mixing colors and properties of watercolor pigments, application methods, developing subject matter and genres, and critique and artistic development.

**ART 110 Drawing I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to drawing. Includes drawing and design problems, varied use of materials and techniques, perceptual skills, critique processes with critical thinking for personal growth, analysis of professional art events or galleries, and portfolio creation.

**ART 115 Color and Composition**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to recognizing color principles and relationships and analyzing duplicating colors. Includes value scale, color wheel, intensity, color relationships, transparency, dimension, luminosity, and creative projects.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 120 Sculptural Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to sculpture and three-dimensional design. Includes concepts and approaches, content development, visual literacy, critical analysis, art elements, exploration of a range of media and techniques, and basic sculptural design lab procedures.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 121 Figure Sculpture**

3 credit hours, 5 periods (2 lec., 3 lab)

Beginning modeling techniques using clay and other media working partly from anatomical references and partly from the model. Includes visual literacy and critical analysis, range of media, approaches to figurative sculpture, technical understanding in working with human anatomy, content, and safety.

*Recommendation:* Completion of ART 120 and 213 before enrolling in this course.

*Information:* There may be additional supply costs in addition to course fees.

**ART 123 Lost Wax Sculpture Casting**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to metal casting of sculpture with emphasis on the ceramic shell method of mold-making, historical and contemporary issues in cast sculpture, and individual artistic expression. Includes major techniques, health and safety issues, verbalization of visual perceptions, project variations, and content.

*Recommendation:* Completion of ART 100 before enrolling in this course.



**ART 128 Digital Photography I**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to digital photography emphasizing the technical and aesthetic issues and how these qualities form image content. Includes Adobe Photoshop basics, history of still photography, applications of digital cameras, aspects of the digital medium, camera and computer equipment requirements, digital still camera, memory and file formats, digital still camera lenses, and proper exposure. Also includes light, color, and temperature; depth of field, shutter speed effects, proper use of digital photography, lighting for digital stills, elements of composition, photographic rendering and reality, outputting and publishing, portfolio preparation, and career options in digital photography.

*Recommendation:* Adobe Photoshop experience is highly recommended before enrolling in this course.

*Information:* Same as DAR 128. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment, and studio will be provided for specific assignments. There will be additional supply costs beyond course fees.

**ART 130 Art and Culture: Prehistoric through Gothic**

3 credit hours, 3 periods (3 lec.)

A survey of the development of art and architecture in Western Civilization from prehistoric through Gothic art with the inclusion of a global perspective. Includes identification and interpretation of cultural and stylistic characteristics, contextual functions and purposes of works of art, influences of cultural values on the production of art, art historical terminology, exemplars of non-Western culture, and critical methodologies.

**ART 131 Art and Culture: Late Gothic through Modern Periods**

3 credit hours, 3 periods (3 lec.)

A survey of the development of art and architecture in western civilization from late Gothic through modern periods. Includes recognition and interpretation of period and style characteristics, function and purposes of art, influences on art production, issues in production and content, historical terminology, and critical methodologies.

**ART 136 Body and Art**

3 credit hours, 3 periods (3 lec.)

A visual cultural exploration of how humans utilize the body as a vehicle for communicating and displaying personal and group identities. Includes anthropological and art historical study of types of permanent and temporary body decorations, masks, and performance; and the ethical issues surrounding the study and use of imagery within and between cultures. Also includes the conceptual examination of global examples and an overview of practical projects to demonstrate the continued vitality of each mode of expression.

*Information:* Same as ANT 136.

**ART 140 Photography I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to black and white photography as an art form with an emphasis on fundamental technique of the camera and wet darkroom. Includes manual camera competencies, manual film development, basic darkroom procedures, portfolio building, visual literacy and critical analysis, and the role of photography.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 141 Photography II**

3 credit hours, 5 periods (2 lec., 3 lab)

Principles and processes of intermediate black and white photography. Includes use of various types of camera formats, development of film, creating a series, individual darkroom space, advanced darkroom techniques, portfolio production, exhibition presentation, copy slide production, and verbalization of visual perceptions.

*Prerequisite(s):* ART 140.

*Information:* Student is required to submit a portfolio for review.

**ART 146 Lighting for Photography I**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to creative professional lighting concepts and techniques for commercial and fine art photography. Includes lighting and studio equipment, light qualities, lighting for form, lighting for surface qualities, still- life photography, portrait photography, image composition, critical analysis, and portfolio.

*Prerequisite(s):* ART/DAR 128.

*Information:* Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments. There may be additional supply costs in addition to course fees. Same as DAR 146.

**ART 147 Alternative Processes in Photography**

3 credit hours, 5 periods (2 lec., 3 lab)

Designed for the advanced image maker interested in expanding knowledge of alternative photographic processes. Includes enlarging negatives for contact printing, nineteenth century processes, twentieth century processes, darkroom materials, and artwork presentation.

*Prerequisite(s):* ART 128 or 140.

**ART 160 Ceramics I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to ceramics. Includes beginning hand-building techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, beginning ceramic techniques, reduction firing, raku firing, ceramic artist research, discussion, and exploration topics.

*Recommendation:* Completion of ART 100 before enrolling in this course or concurrent enrollment.

**ART 170 Metalwork I: Jewelry**

3 credit hours, 5 periods (2 lec., 3 lab)

Exploration of the basic techniques and design approaches used in the fabrication of jewelry and other metalwork. Includes information and background on historical and contemporary metalwork and jewelry, and techniques and processes of jewelry and metalwork.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 175 Ferrous Metalwork: Blacksmithing, Tool Making/Knife Making**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the materials, design, techniques, safety habits, and methods used in ferrous metalwork. Includes basic tools and techniques of blacksmithing, metals lab procedures, tool design, and metallurgical theory and metalworking practice.

*Recommendation:* Completion of ART 100 is recommended before enrolling in this course.

**ART 180 Weaving I: Four-Harness Loom**

3 credit hours, 5 periods (2 lec., 3 lab)

Weaving on a four-harness loom. Includes preparation of the loom; projects involving the use of tabby, twill, tubular, textural, and tapestry weaves in the creation of fiber art; and major creative projects using techniques learned in class.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 181 Mixed Media Fibers**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to fiber as an art medium. Includes fiber processes such as coiling, crochet, macramé, plaiting, and surface design which are used to create projects and artistic compositions.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 210 Drawing II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 110. Includes strengthening of drawing and critical thinking skills. Also includes intermediate drawing and design problems; intermediate use of materials and techniques; perceptual skill and personal development; critique process; engagement and analysis of professional art events or galleries; and portfolio creation.

*Prerequisite(s):* ART 110.

*Information:* Prerequisite(s) may be waived with consent of instructor.

**ART 212 Printmaking I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to basic aesthetics and techniques of printmaking. Includes intaglio techniques, relief printing, monotype techniques, and final presentation.

**ART 213 Life Drawing I**

3 credit hours, 5 periods (2 lec., 3 lab)

Drawing of human figures using the two-dimension concept as a graphic vehicle of expression. Includes gesture and contour drawing, varied time length poses, drawing problems, variety of materials, and individual and group critiques of work.

*Recommendation:* Completion of ART 110 before enrolling in this course.

**ART 214 Printmaking II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 212. Includes advanced problems in aesthetics and techniques of intaglio projects and techniques, relief printing, monotype techniques, and multi-process and alternative approaches to printmaking.

*Prerequisite(s):* ART 212.

**ART 215 Painting I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the fundamentals of oil painting. Includes basic painting techniques and processes, manipulation of compositional elements and formal and contemporary pictorial organization in various genres, surface preparation, personal direction and artistic expression, and health and safety in the painting studio.

*Recommendation:* Completion of ART 115 before enrolling in this course.

**ART 216 Screenprinting I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to screenprinting using water base and inks. Includes screen construction, direct stencil techniques, photographic techniques, one-color printing, multicolor printing and registration, overview of the types of printing papers, and final presentation.

**ART 217 Painting II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 215. Includes intermediate development and reinforcement of basic oil painting techniques and processes, development of compositional elements and formal pictorial organization, manipulation of pictorial elements, artistic expression, and health and safety in the painting studio.

*Prerequisite(s):* ART 215.

*Recommendation:* Completion of ART 115 before enrolling in this course.

*Information:* Prerequisite(s) may be waived with consent of instructor.

**ART 218 Screenprinting II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 216. Includes equipment orientation, advanced stencil-making techniques, printing, and types of printing papers and surfaces.

*Prerequisite(s):* ART 216.

*Information:* Students may select areas of interest for concentration and refinement of skills.

**ART 219 Printmaking III**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 214. Includes experimentation with intaglio, multi-color possibilities with non-traditional compositions, relief and intaglio multi-processes, monoprint with multiple plates, and critical analysis.

*Prerequisite(s):* ART 214.

**ART 220 Sculpture**

3 credit hours, 5 periods (2 lec., 3 lab)

Exploration of methods, materials, and content used in sculpture. Includes studio project concept, media and technique, sculpture lab health and safety procedures, and visual literacy and critical analysis.

*Prerequisite(s):* ART 120.

**ART 223 Life Drawing II**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced drawing of human figures using the two-dimension concept as a graphic vehicle of expression. Includes proportional sight strategies, varied time-length poses, drawing problems and materials, figure as expression, and individual and group critiques of work.

*Prerequisite(s):* ART 213.

*Recommendation:* Completion of ART 110 and/or 210 before enrolling in this course.

**ART 227 Painting III**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of Painting II. Intermediate to advanced development of painting techniques and processes, balancing compositional elements and formal pictorial organization. Includes emphasis on establishing personal artistic expression for presentation of work. Also includes employ procedures for prolonged health and safety in a painting studio.

*Prerequisite(s):* ART 217.

*Recommendation:* Completion of ART 115 before enrolling in this course.

*Information:* Prerequisite may be waived with consent of instructor.

**ART 232 Digital Photography II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 128. Includes intermediate digital cameras with manual functions, intermediate digital darkroom and digital output, quality of light, intermediate image composition, multiple images, intermediate portfolio development, and critical analysis. Also includes the intermediate use of state-of-the-art professional quality computers and image processing software, professional digital cameras, printers, and a lighting studio with professional lighting equipment.

*Prerequisite(s):* ART/DAR 128.

*Recommendation:* Completion of DAR 221 before enrolling in this course.

*Information:* Same as DAR 232. The prerequisite may be waived with consent of the instructor. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment, and studio will be provided for specific assignments. There will be additional supply costs beyond course fees.

**ART 246 Lighting for Photography II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 146. Includes lighting and equipment for studio and location, advanced lighting qualities and techniques, photographing with mixed light sources, lighting for mood and environment, set design and construction, photographing individuals and groups of people, photographing on location, photographing for montage images, advanced image composition, critical analysis, business practices, and portfolios.

*Prerequisite(s):* ART/DAR 146.

*Information:* Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments. There may be additional supply costs in addition to course fees. Same as DAR 246.

**ART 248 Individual Projects in Photography**

3 credit hours, 5 periods (2 lec., 3 lab)

Individual projects in photography at the advanced level. Includes defining a body of work, applying visual presentation formats, editioning a print, and equipment and technical photographic skills.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 249 Artists' Books**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the basics of the various styles of bookmaking. Includes historical and contemporary practices, bookbinding techniques, book styles, materials, text and image, unique and multiple edition book runs, and critique of artists' books.

*Recommendation:* Completion of ART 100 before enrolling in this course.

**ART 250 Gallery and Museum Practices**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to practices and procedures of galleries and museums. Includes preparation of resume and artist statement, create press release and exhibition announcement, exhibition preparation, photographing artwork, frame artwork for exhibition, gallery and museum administration, present a body of work, and market artwork.

*Prerequisite(s):* ART 100.

*Recommendation:* Consult instructor for alternative prerequisites.

**ART 260 Ceramics II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 160. Includes intermediate hand-building techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, intermediate ceramic techniques, reduction firing, raku firing, plaster press mold, ceramic artist research, and discussion and exploration topics.

*Prerequisite(s):* ART 160.

**ART 261 Ceramics III**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 260. Includes intermediate and advanced hand-building techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, intermediate and advanced ceramic techniques, reduction firing, raku firing, plaster press mold, ceramic artist research, and discussion and exploration topics.

*Prerequisite(s):* ART 260.

**ART 262 Ceramics IV**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 261. Includes advanced hand-building techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, advanced ceramic techniques, reduction firing, raku firing, plaster press mold, ceramic artist research, and discussion and exploration topics.

*Prerequisite(s):* ART 261.

**ART 265 Furnace Glassblowing I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the elements, tools, and basic principles of furnace glassblowing. Includes the glassblowing studio and cold working shop orientation, paperweights and solid glass forms, the blowpipe, cold working glass, a final project, and visual literacy and critical analysis.

*Recommendation:* Completion of ART 100 before enrolling in this course.

*Information:* Consent of instructor is required before enrolling in this course. This course requires a substantial special fee through Sonoran Glass School. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.

**ART 266 Furnace Glassblowing II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 265. Includes a review of the glassblowing studio and cold working shop orientation, advanced techniques with hollow and solid glass forms, continued development of blowpipe skills, refinement of cold working glass methods, final project, and visual literacy and critical analysis.

*Prerequisite(s):* ART 265.

*Information:* Consent of instructor is required before enrolling in this course. This course requires a substantial special fee through Sonoran Glass School. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.

**ART 270 Metalwork II: Jewelry**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 170. Includes design approaches to jewelry making, review of various intermediate techniques, functional considerations involved in jewelry design, and safety and health issues.

*Prerequisite(s):* ART 170.

**ART 280 Weaving II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of ART 180. Includes study and exercises using four-eight harness pattern weaves and advanced creative projects. Students may select areas of interest for in-depth exploration.

*Prerequisite(s):* ART 180.

*Recommendation:* Completion of ART 100 is recommended before enrolling in this course.

*Information:* May be taken four times for a maximum of twelve credit hours.

**ART 288 Portfolio Preparation**

3 credit hours, 5 periods (2 lec., 3 lab)

Overview of the development and marketing of a professional portfolio. Includes definition and evaluation of coherent bodies of work, documentation of work, preparation of portfolio production, production of a portfolio, parts of a portfolio, and marketing.

*Information:* For advanced students who have completed coursework in their specific areas. Portfolio concentrations will be determined in a conference between student and instructor. *Information:* Same as FDC 288.

**ART 29611 Independent Study in ART: Art History**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in art history. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29612 Independent Study in ART: Ceramics**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in ceramics. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29613 Independent Study in ART: Metals**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in metals. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29614 Independent Study in ART: Painting, Drawing, and Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in painting, drawing, and design. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29615 Independent Study in ART: Photography**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in photography. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29616 Independent Study in ART: Printmaking**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in printmaking. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29617 Independent Study in ART: Sculpture**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in sculpture. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29618 Independent Study in ART: Fibers**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in fibers. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken four times for a maximum of twelve credit hours.

**ART 29619 Independent Study in ART: Glass**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced projects in glass. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. May be taken four times for a maximum of twelve credit hours. This course requires a substantial special fee through Sonoran Glass Art Academy. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.

## Art For Personal Development

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**APD 062 Acrylic and Oil Painting**

2 credit hours, 4 periods (1 lec., 3 lab)

Introduction to oil and acrylic painting. Includes painting preparation, composing and building paintings, and developing a personal vision.

**APD 065 Watercolor**

2 credit hours, 4 periods (1 lec., 3 lab)

Introduction to watercolor painting for personal use. Includes watercolor materials, properties of watercolor pigments, and watercolor application methods.



## Astronomy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### AST 101IN Solar System

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the science of the nature and origin of the solar system: the sun and its family of planets, along with comets and asteroids. Includes the history of astronomy and special topics regarding the space program. Also includes scientific thinking as an application of critical and quantitative thinking, and science in contrast to pseudoscience. Also includes in-class measurement and mathematical exercises, outside observation projects, independent studies, and self-initiated trips to local astronomy facilities.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

### AST 102IN Stars, Galaxies, Universe

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the universe beyond the solar system. Includes the nature of light, how astronomers and telescopes work, and the possibilities of alien life in the universe. Also includes the lifetime of stars, exotic objects such as quasars, pulsars and black holes; and the origin, nature, and future of the universe. Also includes scientific thinking as an application of critical and quantitative thinking and science in contrast to pseudoscience. Also includes in-class measurement and mathematical exercises, outside observation projects, independent studies, and self-initiated field trips to local astronomy facilities.

*Prerequisite(s):* ICS 081 with a grade of B or better, or MAT 086 with a grade of C or better, or placement into MAT 092, or completion of module 22 in MAT 089A or 089B.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

### AST 105IN Life in the Universe

4 credit hours, 6 periods (3 lec., 3 lab)

The science of astronomy focusing on the formation of the universe, the solar system, and life. Includes Earth's location in space and time, nature of life, light and the spectrum, origin of the universe, galaxies and stars, origin of the solar system, planetary atmospheres, origin of life on Earth, life on other solar system planets, and life around other stars. Also includes observations, experiments, image analysis, scientific and photo-geology laboratory exercise, group telescopic observation projects, and personal observation projects.

*Prerequisite(s):* MAT 086 with a grade of C or better, or placement into MAT 092, or completion of Module 22 in MAT 089A or 089B.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

### AST 296LB Independent Study in Astronomy

1-4 credit hours, 3-12 periods (3-12 lab)

Experience in astronomical research, projects, or topical studies. Specific content to be determined by student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken three times for a maximum of twelve credit hours.

## Automotive Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### AUT 100 Small Engine Troubleshoot & Repair

3 credit hours, 5 periods (1 lec., 4 lab)

Small Engine Troubleshooting and Repair Principles and procedures for overhauling, troubleshooting and repairing small engines. Includes safety and hazardous materials handling, engine types and identification, engine operation and maintenance, disassembly and inspection, engine reconditioning and assembly, fuel and ignition system assembly, mechanical operation and testing, multicylinder engines, and overhead valve (OHV) engines.

### AUT 101 Automotive Maintenance

3 credit hours, 7 periods (1 lec., 6 lab)

Automotive Maintenance Techniques of routine vehicle maintenance. Includes customer vehicle identification and handling, new vehicle pre-delivery inspection and preparation, safety inspection, lubrication tasks, light line tasks, and fluid flushing.

### AUT 105 Light Line Maintenance

3 credit hours, 5 periods (1 lec., 4 lab)

Principles and procedures for light line service. Includes safety, transmission and driveline systems, air conditioning/heating systems, electrical systems, suspension/steering systems, engine performance, and tools and equipment.

**AUT 120 Engine Diagnosis and Repair**

3 credit hours, 7 periods (1 lec., 6 lab)

Techniques for light line engine service. Includes personal and environmental safety, general engine diagnosis, lubrication system diagnosis and repair, cooling system diagnosis and repair, cylinder head diagnosis and repair, and engine block diagnosis and repair.

**AUT 122 Engine Remove and Install**

3 credit hours, 7 periods (1 lec., 6 lab)

Techniques for heavy-line engine exchange. Includes personal and environmental safety, front wheel drive engine removal and installation, and rear wheel drive engine removal and installation.

**AUT 124 Automotive Diesel Engine Tune-Up**

3 credit hours, 7 periods (1 lec., 6 lab)

Diagnosis, repair, and maintenance of mechanical and electronic diesel engine systems. Includes personal and environmental safety, general engine controls, computerized engine controls, electronic diesel injection, air and fuel induction systems, emissions control systems and electronic communication systems.

**AUT 126 Engine Performance and Driveability Troubleshooting**

3 credit hours, 7 periods (1 lec., 6 lab)

Diagnosis and repair of On-board Diagnostics Generation One (OBDI) and Two (OBDII) systems. Includes personal and environmental safety, general engine, computerized engine controls, ignition system, fuel, air induction, and exhaust systems, emissions control systems, and engine related service.

**AUT 128 Automotive Electrical Fundamentals and Applications**

3 credit hours, 7 periods (1 lec., 6 lab)

Principles and procedures of electrical diagnosis and repair. Includes electrical fundamentals and test equipment, electrical system, battery, starting system, charging system, lighting systems, instrumentation, horn and wiper/ washer, integrated circuits, and computerized control systems.

**AUT 129 Automotive Electrical Accessories**

3 credit hours, 7 periods (1 lec., 6 lab)

Electrical circuit diagnosis, repair, and replacement. Includes electrical fundamentals and test equipment, accessory diagnosis and repair, tilt steering column repair, and electrical connectors and terminal replacement.

**AUT 132 Automotive Drivetrain Removal and Replacement**

3 credit hours, 7 periods (1 lec., 6 lab)

Principles and procedures for automotive driveline component exchange. Includes personal and environmental safety, general drivetrain diagnosis, and diagnosis and repair of the clutch, automatic and manual transmissions and transaxle, drive axle and differential, and four-wheel drive components.

**AUT 133 Automatic Transmission/Transaxle Service and Rebuilding**

3 credit hours, 7 periods (1 lec., 6 lab)

Principles and procedures for front- and rear-wheel drive automatic transmission overhaul. Includes personal and environmental safety, automatic transmission diagnosis and service, and transmission in-vehicle and off-vehicle repair.

**AUT 136 Automotive Manual Transmission and Driveline Service**

3 credit hours, 7 periods (1 lec., 6 lab)

Principles and procedures for automotive driveline component overhaul. Includes personal and environmental safety, general drivetrain diagnosis, and diagnosis and repair of manual transmission and transaxle, drive shaft and half-shaft, universal and constant-velocity (CV) joint, drive axle and differential, limited slip differential, and four-wheel drive.

**AUT 138 Automotive Suspension Systems**

3 credit hours, 7 periods (1 lec., 6 lab)

Principles and procedures for automotive suspension system service. Includes safety, adjustment and repair of front and rear suspension systems, and related suspension component service.

**AUT 139 Automotive Steering and Alignment Systems**

3 credit hours, 7 periods (1 lec., 6 lab)

Principles and procedures for automotive steering and alignment systems service. Includes safety, manual and power steering systems, wheel alignment diagnosis, adjustment, and repair. Also includes wheel and tire diagnosis and repair.

**AUT 140 Automotive Brakes Diagnosis and Repair**

3 credit hours, 7 periods (1 lec., 6 lab)

Diagnosis and repair of automotive hydraulic brake systems. Includes personal and environmental safety, hydraulic system diagnosis and repair, drum and disc brake diagnosis and repair, power assist units diagnosis and repair, wheel bearings, park brake, and brake electrical diagnosis and repair, and anti-lock brake systems (ABS) components and operation.

**AUT 142 Automotive Heating, Ventilation, and Air Conditioning**

3 credit hours, 7 periods (1 lec., 6 lab)

Diagnosis and repair of automotive heating, ventilation, and air conditioning (HVAC) systems. Includes personal and environmental safety, HVAC systems components, air conditioning (AC) diagnosis and repair, refrigeration system component diagnosis and repair, heating and engine cooling systems diagnosis and repair, operating systems and controls diagnosis and repair, and refrigerant recovery, recycling, and handling.

**AUT 185 Automotive Shop Skills Application**

.5-3 credit hours, 1.5-9 periods (1.5-9 lab)

Light line diagnosis and repair of daily use vehicles. Includes preparing repair orders, complaint procedures, researching service data, vehicle service and repair tasks, and shop maintenance. Also includes the industry standard of complaint, cause, and correction.

*Information:* Completion of an AUT prefix course in the same specialty area and approval of automotive department chair or instructor is required before enrolling in this course.

## Aviation Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**AVM 100 Aircraft Maintenance Fundamentals**

6 credit hours, 12 periods (2 lec., 10 lab)

Introduction to the fundamental knowledge and skill requirements of an Airframe and Powerplant mechanic. Includes fasteners, safety and rigging, aircraft maintenance tools, aircraft types and construction, aircraft materials, theory of flight, and aircraft structures. Also includes powerplant types, aircraft assembly, engine theory, aircraft repair, aircraft reciprocating engine overhaul/repair, aircraft maintenance, aircraft systems and components, rigging flight controls, and jacking aircraft.

*Information:* AVM 100A and 100B together constitute AVM 100.

**AVM 100A Aircraft Maintenance Fundamentals: Module A**

3 credit hours, 6 periods (1 lec., 5 lab)

Introduction to the fundamental knowledge and skill requirements of an Airframe and Powerplant mechanic. Includes fasteners, safety and rigging, aircraft maintenance tools, aircraft types and construction, aircraft materials, theory of flight, and aircraft structures.

*Information:* Constitutes approximately the first one-half of AVM 100. AVM 100A and 100B together constitute AVM 100.

**AVM 100B Aircraft Maintenance Fundamentals: Module B**

3 credit hours, 6 periods (1 lec., 5 lab)

Introduction to the fundamental knowledge and skill requirements of an airframe and powerplant mechanic. Includes powerplant types, aircraft assembly, engine theory, aircraft repair, aircraft reciprocating engine overhaul/repair, aircraft maintenance, aircraft systems and components, rigging flight controls, and jacking aircraft.

*Prerequisite(s):* AVM 100A.

*Information:* Constitutes approximately the second one-half of AVM 100. AVM 100A and 100B together constitute AVM 100.

**AVM 101 Structural Repair I**

4 credit hours, 8 periods (2 lec., 6 lab)

Structural repair of fuselage, wings and empennage groups. Includes safety, hand and machine cutting, and measuring tools. Also includes layout methods and structural repair processes.

*Recommendation:* Completion of mathematics assessment above MAT 082 before enrolling in this course.

*Information:* Consent of instructor is required before enrolling in this course.

**AVM 102 Structural Repair : Beginning**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of AVM 101. Includes safety, bend allowance, layout, fasteners, machine usage, patching techniques and structural repair techniques.

*Prerequisite(s):* AVM 105.

**AVM 105 Aircraft Sheetmetal Repair**

4 credit hours, 8 periods (2 lec., 6 lab)

Principles and procedures for fuselage, wing, and empennage sheetmetal repair. Includes safety, hand tools, layout methods, materials, fasteners, repair techniques, parts fabrication, and corrosion prevention and control.

**AVM 110 Aircraft Blueprint Reading**

3 credit hours, 3 periods (3 lec.)

Theory and application of aircraft blueprint reading. Includes types of aircraft drawings, measuring tools, drawing and layout equipment, types of views, projections, reference lines, drawing format, title block, manufacturing codes, symbology for fasteners, hardware, and materials. Also includes production of aircraft drawing, sketches, usage of aircraft schematics, graphs, charts, detail, assembly and exploded diagrams.

**AVM 114 Regulatory Requirements**

3 credit hours, 3 periods (3 lec.)

Federal Aviation Administration (FAA) regulatory requirements. Includes certification of aircraft and components, FAA regulations for aircraft maintenance, FAA publications, manufacturing standards, inspection requirements, maintenance, mechanic certification, maintenance publications and forms, and aircraft logs.

**AVM 130 Aircraft Composite Repair**

4 credit hours, 8 periods (2 lec., 6 lab)

Construction and repair processes using advanced composite materials. Includes reinforcing fibers, matrix and core materials, manufacturing of components, composite safety, curing wet layup and prepreg repairs, tools and equipment, and inspection and damage assessment.

*Information: Consent of instructor is required before enrolling in this course.*

**AVM 150 Structural Repair : Intermediate**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of AVM 102. Includes repair publications, materials handling, cable fabrication, machining processes, protective coatings, hand forming and structural repair processes.

*Prerequisite(s): AVM 102.*

**AVM 151 Structural Repair : Advanced**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of AVM 150. Includes locking fasteners, damage classifications, and structural repair processes.

*Prerequisite(s): AVM 150.*

**AVM 165 Aircraft Hardware and Fasteners**

3 credit hours, 3 periods (3 lec.)

Aircraft structural repair hardware and fasteners. Includes specifications and standards, types, control linkages, tubing, hose and packings.

**AVM 180 General CFR 14 Part 65 Maintenance Review**

7.75 credit hours, 8.75 periods (6.75 lec., 2 lab)

Review of the General CFR 14 Part 65 testing topics required for licensure attainment. Includes nine interrelated module topics covering basic electricity, aircraft drawings, weight and balance, fluid lines and fittings, materials and processes, ground operation and servicing, mathematics, maintenance forms and records, and basic physics. Also includes cleaning and corrosion control, maintenance publications, and mechanic privileges and limitations. Each module has key areas of concentration for general aviation mechanics.

*Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. This course has an option to test out of any individual module by scoring eighty percent or greater.*

**AVM 180A General CFR 14 Part 65 - Basic Electricity**

1.5 credit hours, 1.7 periods (1.3 lec., .4 lab)

Review basic electricity associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes basic electricity, electron theory, direct and alternating currents, and measuring equipment. Also includes circuitry, antennas, and avionic suites and instruments.

*Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 180B General CFR 14 Part 65 - Aircraft Drawings**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review aircraft drawings associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft drawings, manufactures' codes for hardware, fasteners, symbology, terms, and basic materials used in aircraft construction. Also includes aircraft reference points, blueprints, schematics, and graphs and charts.

*Information:* AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 180C General CFR 14 Part 65 - Weight and Balance**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review weight and balance associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft weight and balance, documentation requirements, terminology, and variations in category. Also includes extremes, jacking, leveling, and calculating range and limitations.

*Information:* AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 180D General CFR 14 Part 65 - Fluid Lines and Fittings**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review fluid lines and fittings associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes identification, MS and AN lines and fittings. Also includes rigid or flexible lines, high and low pressure applications, and temperature range.

*Information:* AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 180E General CFR 14 Part 65 - Materials and Processes**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review materials and processes associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes materials and processes, cleaning and corrosion control, heat treatment, and non-destructive testing. Also includes manufacturing of aircraft using wood, aluminum, steel, and composites.

*Information:* AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 180F General CFR 14 Part 65 - Ground Operations/Serviceing**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review ground operations and servicing associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes ground operations and servicing, human factors, aircraft towing, electrical, hangar, and fire safety. Also includes servicing aircraft, aircraft taxiing, hand signals, airport signs and meanings, and tower light gun signals.

*Information:* AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 180G General CFR 14 Part 65 - Mathematics**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review mathematics associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes mathematical functions, whole numbers, fractions, decimals, percentages, and ratios. Also includes area and volumes, and algebraic equations.

*Information:* AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 180H General CFR 14 Part 65 - Maintenance Forms/Records**

1 credit hour, 1.1 periods (.9 lec., .2 lab)

Review maintenance forms and records associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes maintenance forms, records and publications, aviation mechanic privileges, and limitations. Also includes federal requirements for aircraft and maintenance personnel.

*Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 180I General CFR 14 Part 65-Basic Physics**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review basic physics associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes matter, energy, sound, fluid, heat, and atmospheric considerations. Also includes mechanical advantages, simple machines, aerodynamics and structural identification.

*Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 181 Airframe CFR 14 Part 65 Maintenance Review**

7.75 credit hours, 8.75 periods (6.75 lec., 2 lab)

Review of the Airframe CFR 14 Part 65 testing topics required for licensure attainment. Includes ten module topics covering wood structure, aircraft covering and finishes, sheet metal and non-metallic structures (composites), assembly and rigging, airframe inspection, hydraulic and pneumatic power systems, cabin atmosphere control systems, aircraft fuel and electrical systems, and ice and rain control systems. Also includes fire protection systems, welding, aircraft instrument systems, communication and navigation systems, and position and warning systems. Each module has key areas of concentration for airframe aviation mechanics.

*Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. This course has an option to test out of any individual module by scoring eighty percent or greater.*

**AVM 181A Airframe CFR 14 Part 65-Aircraft Coverings**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review wood structure and aircraft coverings associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft finishes, welding types and techniques, strength requirements, and wooden structure defects. Also includes fabric coverings and application, aircraft paint compatibilities, and chemicals used in the covering process.

*Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. Offered; Fall, Spring, Summer.*

**AVM 181B Airframe CFR 14 Part 65 - Sheet Metal**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review sheet metal and non-metallic structures associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes rivet type, size and installation, layout fastener edge distance, and finishing materials for base. Also includes dimensional inspection of composite materials, drill size, and machining operations.

*Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*



**AVM 181C Airframe CFR 14 Part 65 - Assembly and Rigging**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review assembly and rigging associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft landing gear systems, flight control balancing, and jacking and leveling. Also includes torquing and safetying of hardware.

*Information:* AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 181D Airframe CFR 14 Part 65 - Airframe Inspection**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review airframe inspection associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes parts conformity, continued airworthiness, and log books and records. Also includes technical publications, service manuals, and type certificate data sheets.

*Information:* AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. Offered; Fall, Spring, Summer.

**AVM 181E Airframe CFR 14 Part 65 - Hydraulic/Pneumatic System**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review hydraulic and pneumatic power systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes fluid lines and fitting identification, rigid and flexible line fabrication, pump and valve types, along with trouble shoot and repair. Also includes selection and use of MS and AN fittings, and fluid identification by use of labels color coding and symbologies.

*Information:* AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 181F Airframe CFR 14 Part 65 - Cabin Atmosphere Control**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review cabin atmosphere control systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes flight physiology, oxygen systems, pressurization, and conditioning of passenger and crew environments. Also includes trouble shooting and repair.

*Information:* AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 181G Airframe CFR 14 Part 65 - Aircraft Fuel Systems**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review aircraft fuel systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes fuel system types, fuel jettison, transfer, and indicating systems. Also includes trouble shooting and repair.

*Information:* AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 181H Airframe CFR 14 Part 65 - Aircraft Electrical System**

1 credit hour, 1.1 periods (.9 lec., .2 lab)

Review aircraft electrical systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft electrical, instrument, communication and navigation, and position and warning systems. Also includes power distribution, wire sizing and runs, and antennas, and indications.

*Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 181I Airframe CFR 14 Part 65 - Ice and Rain Control**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review ice and rain control systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes environmental components for icing and rain systems detection, suppression, and removal.

*Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 181J Airframe CFR 14 Part 65-Fire Protection System**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review fire protection systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes components of detection and suppression systems, fire detection, and fire suspension. Also includes components of fire necessary for fire to be environmentally sustained.

*Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 182 Powerplant CFR 14 Part 65 Maintenance Review**

7.75 credit hours, 8.75 periods (6.75 lec., 2 lab)

Review of the Powerplant CFR 14 Part 65 testing topics required for licensure attainment. Includes eight interrelated module topics covering reciprocating engines, lubrication systems, turbine engines, engine inspection, engine instrument and electrical systems, ignition and starting systems, fuel metering systems, induction and engine airflow systems, engine cooling systems, and propellers. Also includes turbine powered auxiliary power units, engine exhaust and reverser systems, turbine engine lubrication systems, engine fire protection systems and engine fuel systems. Each module has key areas of concentration for powerplant aviation mechanics.

*Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. This course has an option to test out of any individual module by scoring eighty percent or greater.*

**AVM 182A Powerplant CFR 14 Part 65 - Reciprocating Engines**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review reciprocating engines and lubrication systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes engine component identification and position indication, engine dimensional inspection and engine firing order by published technical data. Also includes engine designs and their applications.

*Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.*

**AVM 182B Powerplant CFR 14 Part 65 - Turbine Engines**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review turbine engines associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes turbine engines, turbine powered auxiliary power units, engine exhaust, and reverser systems. Also includes turbine engine lubrication systems and component identification and location.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 182C Powerplant CFR 14 Part 65 - Engine Inspection**

.75 credit hours, .85 periods (.65 lec., .2 lab)

Review engine inspection associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes Non-Destructive Inspection (NDI), technical data, and conditional inspections.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 182D Powerplant CFR 14 Part 65 - Engine Instrument System**

1 credit hour, 1.1 periods (.9 lec., .2 lab)

Review engine instrument and fire protection systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes inspection, check service and repair of aircraft reciprocating powerplant installations. Also includes engine fire detection and suppression systems.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 182E Powerplant CFR 14 Part 65 - Engine Electrical System**

1.5 credit hours, 1.7 periods (1.3 lec., .4 lab)

Review engine electrical, ignition, and starting systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes magneto, starting and ignitions systems, and engine electrical instrumentation transmission. Also includes inspection criterion and duty cycles.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 182F Powerplant CFR 14 Part 65 - Fuel Metering System**

1 credit hour, 1.1 periods (.9 lec., .2 lab)

Review fuel metering and engine fuel systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes fuel injection, fuel pumps, and stoichiometric ratio. Also includes carburetor types and functions.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 182G Powerplant CFR 14 Part 65 - Induction and Engine Airflow**

1 credit hour, 1.1 periods (.9 lec., .2 lab)

Review induction and engine airflow systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes engine cooling system, inspection and maintenance, and cooling fins, hydraulics, and lubricants.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 182H Powerplant CFR 14 Part 65 - Propellers**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Review propellers associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes fixed and constant speed propellers and hub components. Also includes inspection and maintenance.

*Information:* AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

**AVM 202 Aviation Safety**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Introduction to aviation safety procedures. Includes personal safety issues, human factors, accident avoidance, facility fire protection, hazardous materials safety and handling procedures, ramp procedures for movement, and securing and servicing of aircraft and ramp support equipment. Also includes forklift and scissors lift training.

**AVM 203 Structural Repair V**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation AVM 151. Includes jiggging, shoring and alignment, corrosion and heat treatment and structural repair processes.

*Prerequisite(s):* AVM 151.

**AVM 204 Structural Repair VI**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of AVM 203. Includes sealants and sealant applications, heat treatment, plastics and plastic repairs and structural repair processes.

*Prerequisite(s):* AVM 203.

**AVM 205 Motion Dynamics**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Principles of hydraulic power. Includes basic physics, basic mechanics, heat and fluid dynamics, fabrication and installation of fluid lines and fittings, laws of motion, basic aerodynamics, and aircraft nomenclature.

**AVM 206 Materials and Processes**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Introduction to non-metallic and metallic structural materials for comparison of their structural properties. Includes structural materials, metal processing, heat treatment, heat treatment of alloys or limited use metals, non-destructive testing/inspection, corrosion, corrosion types and factors, corrosion-prone areas, corrosion control: steel, aluminum, and limited use metals, processes and materials for corrosion control, aircraft cleaning, and aircraft cleaning agents.

**AVM 207 Weight and Balance**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Preparation of aircraft for weight and balance. Includes service and maintenance manuals, type certificate data sheets, standard weight and balance practices, weighing an aircraft, calculating center of gravity, and correction of out of balance conditions. Also includes addition and subtraction of equipment, equipment lists, flight manual updates, control surface balancing, identification and selection of standard hardware, installation and assembly of specialty hardware, and use of precision measuring equipment.

*Prerequisite(s):* GTM 105V.

**AVM 208 Basic Electricity**

4 credit hours, 8 periods (2 lec., 6 lab)

Introduction to basic aircraft electricity. Includes the study of matter, electron theory, current/electron flow, direct and alternating current, Ohm's Law, Kirchoff's laws, circuit elements, use of testing equipment, and electrical calculation and measurements. Also includes interpretation of schematics and other wiring diagrams, battery theory and maintenance, aircraft electrical systems, and introduction to communication and navigation radio systems.

*Prerequisite(s):* GTM 105V.

**AVM 209 Intermediate Electricity**

4 credit hours, 8 periods (2 lec., 6 lab)

Intermediate electricity includes the study of aircraft airframe electrical components as well as airframe and powerplant electrical systems. Includes electric motors, generators and generator controls, alternators, inverters and related controls, power distribution systems, design and maintenance of aircraft electrical systems, digital electronics, analog electronics, communication and navigation systems, communications, weather warning systems, and electric instruments and autoflight systems.

*Prerequisite(s):* AVM 208.

**AVM 210 Advanced Composite Aircraft Repair I**

4 credit hours, 4 periods (4 lec.)

Theory and application of composite materials utilized in aircraft construction. Includes material types, handling and storage, manufacturing techniques, design criteria, safety, tool and equipment usage, damage and repair assessment, repair techniques, fastening systems, and documentation. Also includes a heavy emphasis on repair performance utilizing the Structural Repair Manuals for composite monolithic and sandwich core structures.

*Corequisite(s):* AVM 210LB

**AVM 210LB Advanced Composite Aircraft Repair I Lab**

1 credit hour, 3 periods (3 lab)

Laboratory for AVM 210. Includes theory and application of composite materials utilized in aircraft construction. Also includes material types, handling and storage, manufacturing techniques, design criteria, safety, tool and equipment usage, damage and repair assessment, repair techniques, fastening systems, and documentation. Also includes a heavy emphasis on repair performance utilizing the Structural Repair Manuals for composite monolithic and sandwich core structures.

*Corequisite(s):* AVM 210

**AVM 211 Alternate Structures**

4 credit hours, 8 periods (2 lec., 6 lab)

Aircraft structural fabrication using wood, tube steel and fabric processes and techniques. Includes structural types, wood and welded tube steel fabrication methods, welding of typical metals used in aircraft construction, fabric covering processes, inspection and maintenance typical repair procedures, and aircraft finishings.

**AVM 218 Airframe Rigging and Landing Gear Systems**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Identification, assembly, alignment, balancing and rigging of aircraft rigging and landing gear systems. Includes aircraft nomenclature, characteristics of flight, flight control system, airframe assembly, rigging, structural alignments, control surface balancing, landing gear, shock struts, landing gear retraction, wheel alignment and steering, brake system servicing, brake assemblies, wheels, tires, warning systems, and anti-skid system.

**AVM 219 Airframe Inspections**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Conformity Inspections of airframes. Includes inspections of incoming spare parts and stock items, airframe and equipment conformity inspections, airframe and systems airworthiness and conformity inspections, conformity inspections of installed equipment, annual and 100-hour inspections of small aircraft, including research of all pertinent inspection documents, service or maintenance manuals, type certificate data sheets, airworthiness directives, service bulletins and additional instructions for continued airworthiness, inspection procedures for large aircraft work orders, non-routine job cards used by local aviation maintenance companies.

*Prerequisite(s):* AVM 114.

**AVM 223 Hydraulic and Pneumatic Power**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Hydraulic and pneumatic system components. Includes system operating principles, fluids, pressures, hydraulic powered flight controls, landing gear, braking and accessory power systems, pneumatically powered or assisted accessories, and system and component inspection servicing and repairs.

**AVM 224 Atmospheric Controls**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Atmospheric controls and its elements that are of concern to flight. Includes ice and rain detection and control systems, types of operations and maintenance, physiological requirements for flight crews and passengers and the human support systems, oxygen systems, cabin pressurization system and their operations, and safety and maintenance requirements.

**AVM 225 Fire, Ice, Rain, and Fuel Systems**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Theory and application of fire, ice, rain and fuel systems. Includes fire detection terms, extinguishing and protection systems, smoke detection, fire warning, fire extinguishing system components used, how systems function, inspection testing and maintenance, ice and rain protection terms, formation and conditions for icing of aircraft, ice and rain detection, protection systems components, functions, inspection and maintenance, fuel system terms, safety system requirements, fuel tank types and construction, indicating, fueling, and defueling inspection and maintenance.

**AVM 226 Engine Electrical**

4 credit hours, 8 periods (2 lec., 6 lab)

Inspection, repair, and modification of engine electrical systems. Includes magneto(s) (components, tooling, wiring, and drives), ignition switches, ignition harness, ignition booster system, spark plugs, engine ignition analyzers, turbine engine (ignition transformers and igniter plugs), engine electrical controls (switches, fuses and circuit breaker, circuits, wiring, installation, and engine bulkhead), and technical data manuals and catalogs.

*Prerequisite(s):* AVM 208.

**AVM 227 Engine Air Flow Systems**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Fundamentals of engine air flow systems. Includes reciprocating engine induction systems, alternate induction air systems, induction systems maintenance, superchargers, turbochargers, turbo compound systems, reciprocating engine exhaust systems, exhaust subsystems, exhaust system maintenance, reciprocating engine cooling, turbine engine induction systems, turbine engine cooling, turbine engine exhaust systems, turbine engine exhaust systems maintenance, and turbine engine airflow subsystems.

**AVM 228 Aircraft Propellers**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Basics of aircraft propellers. Includes propeller theory, nomenclature, types, construction, and installation and maintenance. Also includes constant speed systems, feathering systems, reversing systems, icing systems, synchronizing systems, and unducted fans.

**AVM 229 Engine Support Systems**

2.5 credit hours, 5 periods (1.25 lec., 3.75 lab)

Theory and application of support systems for gas turbine engines. Includes fire protection, fire detection systems, fire extinguishing agents and systems, and fire detection and extinguishing system maintenance. Also includes turbine engine pneumatic systems, pneumatic starting systems, thrust reversers, auxiliary power units, turbine engine removal and installation, and engine storage and transport.

**AVM 231 Engine Principles, Monitoring and Inspection**

4 credit hours, 8 periods (2 lec., 6 lab)

Principles, monitoring, and inspection of engines. Includes theory and construction of powerplants, requirements, types of engines, reciprocating engine design and construction, radial engine design and construction, reciprocating engine operating principles, engine power and efficiencies, turbine engine construction, turbine engine sub-assemblies, turbo prop engines, turbine engine operation principles, engine instrumentation, instrument principles of operation, maintenance of instruments and systems, and engine inspection requirements.

**AVM 232 Reciprocating Engine Overhaul**

4 credit hours, 8 periods (2 lec., 6 lab)

Basic aircraft reciprocating engine overhaul. Includes engine components, wrist pins, connection rods, crankshafts, case, cam shafts, lifters, valves, push rods and tubes, rocker assemblies, accessories, lubrication, overhaul options overhaul credentials, overhaul procedures, reassembly after overhaul, engine installations, engine break-in, and test cell procedures.

**AVM 233 Turbine Engines**

4 credit hours, 8 periods (2 lec., 6 lab)

Basic gas turbine engine and turbo propeller component makeup and repair. Includes inspection, servicing, and repairs performed on engine components: compressor, diffuser, combustion, accessory drive, and lubricating system. Also includes a reassembly overhaul.

**AVM 234 Engine Fuel Metering and Operation**

4 credit hours, 8 periods (2 lec., 6 lab)

Fundamentals of aircraft fuel systems. Includes fuel metering theory and requirements, aviation fuels, float type carburetion, float carburetor maintenance and installation, and pressure carburetor maintenance and installation. Also includes fuel injection systems, Bendix fuel injection and maintenance, and Teledyne Continental Motors (TCM) fuel injection and maintenance. Also includes fuel metering system components and maintenance, turbine engine fuel systems components and maintenance, jet fuel controls; and reciprocating, turbine, and turbo propeller engine operations.



**AVM 260 Advanced Composite Aircraft Repair II**

1 credit hour, 1 periods (1 lec.)

Theory and application of composite and bonded metal structures utilized in aircraft construction. Includes repair methods selection, source documents, repair methods and design criteria, bonded metal repairs, tank and non-tank processing, priming, and environmental considerations. Also includes a heavy emphasis on repair performance utilizing the Structural Repair Manuals for composite monolithic and sandwich core, and bonded metal structures.

*Prerequisite(s):* AVM 210/210LB.

*Corequisite(s):*AVM 260LB

**AVM 260LB Advanced Composite Aircraft Repair II Lab**

3 credit hours, 9 periods (9 lab)

This is the Lab portion of AVM 260.

*Prerequisite(s):* AVM 210/210LB.

*Corequisite(s):*AVM 260

## Avionics Technician Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ATT 100 Basic Electricity for Avionics**

3 credit hours, 3 periods (3 lec.)

Basic electricity for Avionics. Includes the study of matter, electron theory, current/electron flow, direct and alternating current, Ohm's Law, Kirchoff's laws, circuit elements, use of testing equipment, and electrical calculation and measurements. Also includes interpretation of schematics and other wiring diagrams, battery theory and maintenance, aircraft electrical systems, and introduction of solid state components.

*Prerequisite(s):* GTM 105V.

**ATT 101 Avionics Familiarization**

3 credit hours, 3 periods (3 lec.)

Overview of the evolution of modern avionics. Includes the role and responsibilities of the avionics technician; the classification and requirements of airports, airspace, and atmospheric environments; and types of avionics equipment used today. Also includes instrument layouts, crew cabin layouts, and advisory circulars and regulations pertaining to operation and management.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 102 Aircraft Electrical Systems**

3 credit hours, 3 periods (3 lec.)

Overview of aircraft electrical systems, including AC and DC power generation and distribution for small general aviation (GA), corporate, and commercial airline transport aircraft. Includes electrical schematics, manuals, and diagrams. Also includes aircraft system power requirements for avionics; fuel and flight management; cabin atmospheric control; landing gear and flight controls; load; warning systems; cabin lighting; and entertainment systems.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 103 Basics of Avionics Installation**

3 credit hours, 4 periods (2 lec., 2 lab)

Concepts, techniques, and skills used to install electronic and avionics equipment. Includes avionics support structure installation and fabrication; instrument mounting; terminal installation; cutting, sizing, marking, bundling, and anchoring techniques and practices; handling precautions for sensitive devices; and selecting proper equipment and tools. Also includes a review of electrical equipment bays, wiring diagrams, installation drawings, circuit protection devices, lighting processes, and regulatory requirements.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 104 Operating Systems I, Communication and Navigation**

4 credit hours, 5 periods (3 lec., 2 lab)

Topical discussion on communication and navigation systems, schematic usage, special tooling and equipment, switching, circuit protection, and instrument panel features. Includes standard wiring practices of single and multiple flight instrumentation sources, location reporting equipment, and essential standard avionics flight devices.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 201 Operating Systems II, GPS Navigation and Auto Pilot**

3 credit hours, 3 periods (3 lec.)

Principles of Global Positioning Systems (GPS) and autopilot systems operation and use by flight crews. Includes installation planning for electrical system requirements, typical mounting, wiring methods, connectors, and antenna installation. Also includes pre- and post-installation verification of system integration, functional testing, and troubleshooting on GPS and autopilot systems.

*Prerequisite(s):* ATT 104.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 202 GPS Navigation and Auto Pilot Installation**

5 credit hours, 7 periods (3 lec., 4 lab)

Principles of Global Positioning Systems (GPS) and autopilot systems installation. Includes substantial application of systems, processes, and installations introduced in ATT201, such as installation planning for electrical system requirements, typical mounting, wiring methods, connectors, antenna installation, and operations and use by flight crews. Also includes pre- and post-installation verification of system integration, functional testing, and troubleshooting on GPS and autopilot systems. Also includes an introduction to the installation of engine indicating instruments and their relationship to the instrument console.

*Prerequisite(s):* ATT 104 and 201.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 203 Avionics Test Equipment**

4 credit hours, 6 periods (2 lec., 4 lab)

Overview of the evolution of modern avionics systems, test equipment, and operation of and training on test equipment. Includes functional testing of pitot static, transponder and altitude reporting units, Very High Frequency Omni-directional Range (VOR), Global Positioning Systems (GPS), and compass navigation devices installed in aircraft or functioning mockups. Also includes special tooling and test apparatuses, the handling of aircraft, and safety for personnel and equipment undergoing testing.

*Prerequisite(s):* ATT 104.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 204 Glass Cockpit Installer**

5 credit hours, 7 periods (3 lec., 4 lab)

Installation of glass cockpit systems. Includes panel installation, functional checks, troubleshooting, installation and handling practices for Multifunction Display Units (MFD), Primary Flight Displays (PFD), and Engine Indicating and Crew Alerting Systems (EICAS). Also includes glass cockpit upgrade training, to include the removal of older "steam" gauges and various other indication instruments and replacement with modern glass cockpit indicating systems.

*Prerequisite(s):* ATT 103 and 104.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 205 Operating Systems III, Infrared and Weather Radar**

3 credit hours, 3 periods (3 lec.)

Principles of infrared and weather radar systems operation and use by flight crews. Includes installation planning, electrical system requirements, typical mounting, wiring methods, connectors, and antenna installation. Also includes system integration, functional testing of Enhanced Vision Systems (EVS), Weather (Wx) Radar, and radio altimeter systems. Also includes safety training and the operation, installation, and troubleshooting of EVS systems.

*Prerequisite(s):* ATT 101 and 102.

*Information:* Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

**ATT 206 Infrared and Weather Radar Installation**

5 credit hours, 7 periods (3 lec., 4 lab)

Installation of weather radar systems, radio altimeter systems, and Enhanced Vision Systems (EVS). Includes schematic use, special tooling and equipment, switching, circuit protection, and instrument panel features for modification for installation. Also includes standard wiring and installation of stand-alone and integrated avionic devices and multifunctional display equipment. Also includes a mandatory requirement that all installed equipment be tested for functionality after installation.

*Prerequisite(s):* ATT 103 and 205.

*Information:* Includes an emphasis on system operation, testing, and troubleshooting techniques demonstrated by technicians trained on the aircraft systems. Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

## Behavioral Health Services

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**BHS 132 Communication Skills in Behavioral Health Services**

3 credit hours, 3 periods (3 lec.)

Development of communication skills important in establishing and maintaining effective helping relationships. Includes an emphasis on building rapport, improving effective listening skills, establishing trust, and delivering and receiving appropriate feedback. Also includes an overview of the helping process and the professional and physical environments in which counseling occurs.

**BHS 154 Behavioral Health Lab and Safety Protocol**

3 credit hours, 4 periods (2.5 lec., 1.5 lab)

Introduction to the basic clinical procedures and safety precautions performed by a behavioral health specialist on site in a behavioral health setting. Includes facility, environmental, and patient safety; clinical and observational procedures such as taking vital signs and blood glucose monitoring (point of care testing); and observation and documentation of patients' behavior and physical condition. Also includes personal patient comfort and care, as well as basic medical terminology used in a behavioral healthcare clinical setting.

*Prerequisite(s):* SSE 128.

**BHS 172 Clinical Behaviors**

3 credit hours, 3 periods (3 lec.)

Clinical Behaviors Overview of primary clinical behaviors encountered by behavioral health professionals, including substance use, violence and abuse, and grief and bereavement. Includes the spectrum of substance use issues, such as classification of drugs, theories of addiction, cultural perspectives, and treatment interventions. Also includes historical and contemporary causes of domestic violence, community resources, treatment centers and support groups, cultural awareness, and special populations at risk. Also includes techniques, strategies and treatment modalities for working with the bereaved and those affected by traumatic loss.

**BHS 189LC Behavioral Health Clinical - Basic**

1 credit hour, 2 periods (.75 lec., 1.25 lab)

Provides students with hands on experience at a behavioral health organization. Includes an orientation to working in the behavioral health field; observation of professionals working directly with individuals receiving behavioral health care; professionalism in the behavioral health field; and application of the principles of care giving through hands on experience. Also includes direction in case management; patient relations; case documentation; and safety, clinical, and regulatory protocol.

*Prerequisite(s):* SSE 128.

**BHS 250 Case Documentation**

2 credit hours, 2 periods (2 lec.)

Observation and documentation techniques necessary to maintain clinical records in a variety of community behavioral health settings. Includes appropriate terminology, technical forms, and the application of legal issues in case reports. Also includes an introduction to the types of clinical cases that behavioral health professionals encounter during the continuum of care, such as substance use and mental health issues.

*Prerequisite(s):* CSA 100, SSE 128, BHS 132 and 154.

## Biology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### BIO 056IN Introductory Biology for Pima Nursing

3 credit hours, 7 periods (2 lec., 5 lab)

Introduction to biology for nursing students. Includes specific strategies for biology success, scientific method, scientific measurement, light microscopy, categories of biomolecules, cell membranes and organelles, cellular metabolism, cellular reproduction, basic genetics, and human tissues.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously. This course is designed for students who need to improve strategies to increase their success in college science courses and for students who require extensive development in the vocabulary and basic principles of science and biology. This course is only for students pursuing a Pima Nursing degree (please check with a nursing advisor).*

### BIO 100HC Biology Concepts: Honors

4 credit hours, 6 periods (3 lec., 3 lab)

Basic principles and concepts of biology. Includes methods of scientific inquiry, cell structure, chemistry, metabolism, reproduction, genetics, molecular biology, evolution, ecology, and current issues in biology. Also includes additional Honors content.

*Information: IN designates lecture/lab combination. Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.*

### BIO 100IN Biology Concepts

4 credit hours, 6 periods (3 lec., 3 lab)

Basic principles and concepts of biology. Includes methods of scientific inquiry, cell structure and chemistry, metabolism, reproduction, genetics, molecular biology evolution, and ecology and current issues in biology.

*Information: IN designates an integrated lecture/lab combination.*

### BIO 104IN Animal Sexual Behavior

4 credit hours, 6 periods (3 lec., 3 lab)

Exploration of animal mating patterns via behavioral research. Includes animal behavior, evolutionary concepts, genetics of behavior, maximizing reproduction, and student research projects.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

### BIO 105HC Environmental Biology: Honors

4 credit hours, 6 periods (3 lec., 3 lab)

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Includes ecosystem structure and function, population dynamics, and human impacts on air, water, land, and biodiversity. Also includes additional Honors content.

*Information: IN designates an integrated lecture/lab combination. Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.*

### BIO 105IN Environmental Biology

4 credit hours, 6 periods (3 lec., 3 lab)

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Includes ecosystem structure and function, population dynamics, and human impacts on air, water, land, and biodiversity.

*Information: IN designates an integrated lecture/lab combination.*

### BIO 108IN Plants, People and Society

4 credit hours, 6 periods (3 lec., 3 lab)

Past, present and future roles of plants in our lives. Includes basic principles of botany, modern, historical and regional perspectives on human use of plants, and present and future practices in plant cultivation.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

**BIO 109IN Natural History of the Southwest**

4 credit hours, 6 periods (3 lec., 3 lab)

Study of the common plants and animals of the Southwest. Includes their identification, adaptation, behavior and ecology. Also includes physical geography and geological principles of the region.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 112 Bioscience Laboratory Fundamentals**

3 credit hours, 7 periods (1 lec., 6 lab)

Preparation of students to become lab technicians by introduction of fundamental skills, knowledge, and attitudes essential to any lab professional. Includes lab safety, documentation, quality control, lab math, validation and verification of results. Also includes understanding government regulations, biological solution preparation, assays, biological separations, and growing cells.

*Prerequisite(s):* MAT 089 complete module 35, or MAT 095, or MAT 097 (or assessment into MAT 151 or higher on the Math assessment test), and CHM 130IN or higher (or a score of 34 or higher on the CHM 130 assessment test; banner code "CMAS") or concurrent enrollment in CHM 130IN or higher.

**BIO 115IN Wildlife of North America**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the mammals, birds, fish, reptiles, amphibians, and selected invertebrates of North America. Includes habitats, wildlife interrelationships, population dynamics, and discussion of national, state, and private wildlife agencies. Also includes a laboratory emphasis on native Arizona species.

*Information:* IN is the integrated version of the course with lecture and lab taught simultaneously.

**BIO 121IN Current Issues in Human Biology**

4 credit hours, 6 periods (3 lec., 3 lab)

Fundamental principles of human biology emphasizing the evolutionary processes that create human morphological and behavioral diversity. Includes an in-depth study of biological differences existing within and between human populations, focusing on genetic mechanisms and adaptive strategies. Topics of instructor and student interest will be examined through the lens of human evolutionary biology.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 127HC Human Nutrition and Biology: Honors**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition. Also includes additional Honors content.

*Information:* Same as FSN 127HC. Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.

**BIO 127IN Human Nutrition and Biology**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously. Same as FSN 127IN.

**BIO 131 Biosciences I: Laboratory Techniques**

3 credit hours, 5 periods (2 lec., 3 lab)

An introduction to a variety of techniques used in biotechnology, molecular biology, and recombinant DNA technology. Includes bioscience lab safety, lab documentation, lab mathematics, biochemical principles, proteins, and DNA. Also includes proper use of lab equipment necessary to work in a research or industrial setting.

*Prerequisite(s):* MAT 097 with a C or better (or placement into MAT 151 or higher on the Math assessment test), and CHM 130IN (or score of 34 or higher on CHM 130 "CMAS" assessment test).

**BIO 132 Biosciences II: Laboratory Research**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of Biosciences I, with an emphasis in human genetics and biotechnology. Includes career exploration, history and application of recombinant DNA technology, fundamentals of cell biology and genetics, the Human Genome Project, and bioethics. Also includes an emphasis on a variety of advanced biotechniques and skills.

*Prerequisite(s):* BIO 112 and 131.

**BIO 135IN Genetics, Biotechnology and Human Affairs**

4 credit hours, 6 periods (3 lec., 3 lab)

An introduction to human genetics and biotechnology including career exploration, history and applications of recombinant DNA technology, the human genome project, and laboratory safe practices. Includes introduction to biotechnology, fundamentals of cell biology and genetics, applications of biotechnology, bioethics, careers in biotechnology, and laboratory techniques.

*Recommendation:* Completion of high school chemistry and high school biology before enrolling in this course.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 156IN Introductory Biology for Allied Health**

4 credit hours, 6 periods (3 lec., 3 lab)

Introductory Biology for Allied Health Introduction to biology for the health professions. Includes principles of science, scientific measurement and laboratory techniques, chemistry of life, cell anatomy and physiology, cellular reproduction, patterns of inheritances and human tissues.

*Recommendation:* Completion of CHM 130IN before enrolling in this course.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 157 Basic Histology for Anatomy and Physiology**

1 credit hour, 1 periods (1 lec.)

Structure and function of tissues found in the human body. Includes epithelial, connective, muscle, and nerve tissues.

*Recommendation:* Prior completion of or concurrent enrollment in BIO 181IN is recommended.

*Information:* Completion of this course and BIO 181IN with grades of C or better will enable a student to enroll in BIO 201IN.

**BIO 160IN Introduction to Human Anatomy and Physiology**

4 credit hours, 6 periods (3 lec., 3 lab)

Structure and dynamics of the human body. Includes foundations such as chemical, cellular and tissue levels of organization. Also includes major structures and functions of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 181HC General Biology I (Majors): Honors**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of structure and function of living things at the molecular and cellular levels of organization. Includes introduction to the scientific process, scientific measurements and laboratory techniques, chemistry of cells, organization of cells, metabolism, cell communication, patterns of cell division, patterns of inheritance, nucleic acids, gene expression, and biotechnology. Also includes additional Honors content.

*Prerequisite(s):* With a grade of C or better: CHM 151IN.

*Recommendation:* WRT 090 or 096 or assessment into WRT 101. BIO 100IN or BIO 156IN is recommended for students who did not complete one year of general high school biology with a grade of B or better.

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.

**BIO 181IN General Biology I: (Majors)**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of structure and function of living things at the molecular and cellular levels of organization. Includes introduction to the scientific process, scientific measurements and laboratory techniques, chemistry of cells, organization of cells, metabolism, cell communication, patterns of cell division, patterns of inheritance, nucleic acids, gene expression, and biotechnology.

*Prerequisite(s):* With a grade of C or better: CHM 151IN.

*Recommendation:* WRT 090 or 096 or assessment into WRT 101. BIO 100IN or BIO 156IN is recommended for students who did not complete one year of general high school biology with a grade of B or better.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.



**BIO 182HC General Biology II (Majors): Honors**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of living things at the levels of organism, population, community, and ecosystem. Includes evolution of life, classification of organisms, survival strategies, interactions between organisms and with their environment, ecosystem structure, and human impacts upon the biosphere. Also includes additional Honors content.

*Recommendation:* Completion of BIO 181 before enrolling in this course.

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before enrolling in this course. Honors Content may include: Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.

**BIO 182IN General Biology II: (Majors)**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of living things at the levels of organism, population, community, and ecosystem. Includes evolution of life, classification of organisms, survival strategies, interactions between organisms and with their environment, ecosystem structure, and human impacts upon the biosphere.

*Recommendation:* Completion of BIO 181IN before enrolling in this course.

*Information:* IN designates an integrated lecture/lab combination.

**BIO 183IN Marine Biology**

4 credit hours, 6 periods (3 lec., 3 lab)

Survey of marine environments and their biotic communities. Includes scientific measurements and laboratory techniques, principles of marine science, life in the marine environment, structure and function of marine ecosystems, and humans and the sea. Also includes an emphasis on the natural history of marine organisms.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 184IN Plant Biology**

4 credit hours, 6 periods (3 lec., 3 lab)

Study of principles and processes in plant biology with emphasis on vascular plants. Includes plant structure, plant physiology and development, genetics, and evolution, and ecology.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 201IH Human Anatomy, Physiology and Histology**

5 credit hours, 7 periods (4 lec., 3 lab)

Structure and function of the body. Includes introduction to the scientific process, scientific measurements, laboratory techniques such as microscope use, levels of organization, chemistry as applied to physiology, cell biology, gene regulation, homeostasis, anatomical terms, integumentary system, skeletal system and articulations, muscular and nervous systems, and special senses, as well as histology of these systems.

*Prerequisite(s):* REA 091 with a C or better or placement into REA 112 or higher or consent of instructor.

*Information:* The IH suffix designates an integrated version of the course with the lecture and lab taught simultaneously. This course combines elements from BIO 156IN and meets the prerequisite for BIO 202IN.

**BIO 201IN Human Anatomy and Physiology I**

4 credit hours, 6 periods (3 lec., 3 lab)

Structure and function of the body. Includes levels of organization, homeostasis and disease, anatomical terms, integumentary system, skeletal system and articulations, muscular and nervous systems, autonomic nervous system, and special senses.

*Prerequisite(s):* BIO 156IN, or 056IN, or BIO 181 and BIO 157, with a grade of C or better; completion of a 200 level (or higher) Human Anatomy and Physiology course; or a passing grade on the Biology Assessment Exam.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 202IN Human Anatomy and Physiology II**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of BIO 201IN/IH. Includes the structure and function of the endocrine cardiovascular, lymphatic/immune, respiratory, digestive, urinary, and reproductive systems.

*Prerequisite(s):* BIO 201IN or 201IH with a grade of C or better.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously. Offer: Fall, Spring, Summer.

**BIO 203 Anatomy and Physiology Review for Health Related Professions**

1.25 credit hours, 1.25 periods (1.25 lec.)

Review of human body systems which includes clinical application of human anatomy and physiology. Includes the integumentary, skeletal, muscular, nervous, endocrine, circulatory, immune, respiratory, digestive, urinary/renal, and reproductive systems.

*Prerequisite(s):* BIO 201IN and 202IN with a C or better.

*Recommendation:* For students who are preparing to take board exams in the health related professions, or those who wish to review anatomy and physiology.

*Information:* May be taken 3 times for a maximum of 3.75 credit hours.

**BIO 205IN Microbiology**

4 credit hours, 6 periods (3 lec., 3 lab)

Overview of the microbial world (bacteria, protozoa, fungi, and viruses). Includes microbial cell structure and function, diversity of microorganisms, growth, metabolism, microbial genetics, the identification of microorganisms, and the role of microorganisms in disease and immunity. Also includes principles of microbial control, antibiotic resistance, epidemiology and pathogenesis, as well as laboratory exercises to provide first hand experience with the organisms and processes discussed in lecture.

*Prerequisite(s):* BIO 056IN, 156IN, or 181IN, or 201IH, or 201IN, or required score on the Biology assessment test.

*Recommendation:* Completion of CHM 130IN or equivalent.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**BIO 206 Biotechnology Instrumentation I**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles and methodologies of recombinant DNA technology. Includes preparation of solutions and growth media in a laboratory setting, and genetic analyses.

**BIO 207 Biotechnology Instrumentation II**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles and methodologies of protein expression, isolation, identification and purification. Includes immunological and cell culture techniques.

*Information:* Consent of instructor required before enrolling in this course.

**BIO 218 Human Pathophysiology**

4 credit hours, 4 periods (4 lec.)

Pathophysiological processes in humans and the development of clinical reasoning skills that distinguish between normal physiology and the physiology of disease or injury. Includes the etiology, clinical presentation, and appropriate treatment of selected disease processes. Also includes the pathophysiology of the hematological, cardiovascular, pulmonary, renal, endocrine, gastrointestinal, pancreatic, neurologic, musculoskeletal and reproductive systems.

*Prerequisite(s):* BIO 201IN, 202IN, and 205IN with a grade of C or better.

*Information:* This course is a prerequisite for the concurrent Associate Degree/Baccalaureate Degree Nursing program through Pima Community College and Northern Arizona University.

**BIO 220 Introduction to Neurobiology and Cognitive Science**

3 credit hours, 3 periods (3 lec.)

Fundamentals of nervous system's structures, pathways, connections, and functions. Includes introduction to the principles of neuroanatomy, cellular and systems neurobiology, and cognitive neuroscience. Also includes examination of normal brain function compared to neuropathology; survey data from work with animals, humans, machines and how it has furthered our understanding of complex human behavior; and social significance of brain research.

*Prerequisite(s):* With a grade of C or higher: BIO 181IN or 201IH or 201IN or 202IN.

**BIO 250 Biomedical Ethics**

3 credit hours, 3 periods (3 lec.)

Introduction to the nature and scope of decision making in public health, medicine and health care, as it relates to bioethical issues. Includes overview of dilemmas in bioethics, legal, social and ethical issues in human genetics, the beginning of life, and the end of life. Also includes life and death decisions, human organ transplantation, and regulations of human research.

**BIO 291 Biology Internship**

1-3 credit hours, 3-9 periods

Supervised work experience in a bioscience industry or academic research lab setting. Includes emphasis on the observation and enhancement of professional and management skills, team communication and interaction. Also includes the application of research principles, procedures, protocols, and regulations in the workplace. Student may rotate through a variety of industry or academic research sites agreed upon by the instructor and student.

*Prerequisite(s):* BIO 132 or concurrent enrollment, and 156IN.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of three credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. One credit hour is equivalent to 45 clock hours at internship site.

**BIO 295LB Independent Research in Biology**

1-4 credit hours, 3-12 periods (3-12 lab)

Experience in scientific laboratory or field research. Specific content to be determined by student and instructor.

*Information:* One semester of biology and consent of instructor are required before enrolling in this course. *Information:* May be taken three times for a maximum of twelve credit hours.

**BIO 296 Special Projects in Biology**

1-4 credit hours, 3-12 periods (3-12 lab)

Exploration of special interest areas. Content to be determined by student and facilitator/instructor.

*Information:* One year of biology is required before enrolling in this course. *Information:* May be taken two times for a maximum of eight credit hours.

**BIO 299 Co-op: Biotechnology**

1 credit hour, 1 periods (1 lec.)

Principles of job success. Includes biotechnology workplace skills; communication; time and energy management; stress and its management; careers; placing yourself on the job market; principles, techniques, and practices in the career field; and problems in the work situation.

*Prerequisite(s):* BIO 206 and 207 with a grade of B or better.

*Corequisite(s):* BIO 299WK

*Recommendation:* Completion of CHM 236IN before enrolling in this course.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken two times for a maximum of two credit hours.

**BIO 299WK Co-op Work: Biotechnology**

3 credit hours, 15 periods (15 lab)

A supervised cooperative work program for students in the biotechnology industry or academic research. Includes teacher-coordinators working with students and their supervisors in industry or research. Also includes developing competency and improved self-confidence in the biotechnology workplace.

*Prerequisite(s):* BIO 206 and 207 with a grade of B or better.

*Corequisite(s):* BIO 299

*Recommendation:* Completion of CHM 236IN before enrolling in this course.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* This may be paid or unpaid experience.

*Information:* May be taken two times for a maximum of six credit hours.

## Building/Construction Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**BCT 100 Professionalism in Service for BCT**

1 credit hour, 1 periods (1 lec.)

Procedures in business and customer service. Includes an introduction to professionalism, self-evaluation, service routine, addressing dissatisfied customers, and problem situations.

**BCT 101 Principles of Construction**

3 credit hours, 3 periods (3 lec.)

Introduction to the principles of construction. Includes the building delivery process, government constraints, green building and sustainable design, calculating loads and resistance factors, and composition, closing process, codes, and Green Building Certification and Award.

**BCT 102 Building Materials**

3 credit hours, 3 periods (3 lec.)

Construction standards and specific types of building materials used in commercial, industrial, residential and private construction projects. Includes beginning construction standards, site work, concrete, masonry, metals, wood and wood products, thermal and moisture protection, doors and windows, finishes, specialties, equipment, furnishings, special construction, conveying systems, mechanical systems, and electrical systems.

**BCT 104 Introduction to Equipment Maintenance**

4 credit hours, 6 periods (2 lec., 4 lab)

Procedures and concepts for maintaining buildings in a commercial/industrial setting. Includes preventative maintenance requirements, maintenance terminology, industrial tool use, electrical equipment maintenance, electrical feed, bearing applications, sheaves applications, flexible drives and V-belts, centrifugal pump maintenance, vacuum pump maintenance, fire suppressant system maintenance and repair, metal fabrication, steel pipe plumbing, as-built print reading, lubricants, and interior wall frame/ construction.

*Prerequisite(s):* BCT 132 or concurrent enrollment.

**BCT 105 Professionalism in Service, Construction Math, Basic Rigging**

3 credit hours, 3 periods (3 lec.)

Concepts, procedures and techniques in service, construction math, and rigging. Includes an introduction to professionalism, self-evaluation, service routine, addressing dissatisfied customers, and problem situations. Includes basic mathematics concepts and employability in the construction industry. Also includes how to safely handle and use rigging equipment.

*Information:* Same as BCT 100, BCT 112, and BCT 115.

**BCT 106 Soldering and Brazing for BCT**

4 credit hours, 6 periods (2 lec., 4 lab)

Principles and technologies of joining different types of alloys by braze welding and soldering. Includes safety and health, procedures and design, pre-cleaning and surface preparation, filler metals, fluxes and atmospheres, torch brazing, pipe and tube, copper, and cast iron.

*Prerequisite(s):* BCT 105 and 107 or concurrent enrollment.

*Information:* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**BCT 107 Basic Safety, Hand & Power Tools, Blueprint Reading**

3 credit hours, 3 periods (3 lec.)

Introduction to federal safety standards, tools, and blueprint reading in the construction industry. Includes employer responsibility-employee right to know, personal protective equipment, material handling, hand and power tools, electrical hazards, hazards communication standards, fire safety, scaffolds, and fall protection. Also includes basic concepts in blueprint reading terminology, components, lines, locations, dimensions, production techniques, parts, and locations.

*Information:* Same as BCT 111, BCT 113, and BCT 114.

**BCT 109 NCCER Core Introductory Craft Skills**

5.75 credit hours, 6.65 periods (4.85 lec., 1.8 lab)

National Center for Construction Education and Research (NCCER) core introduction to craft skills. Includes basic safety, basic construction math, introduction to hand tools, introduction to power tools, basic construction drawings, basic communications skills, basic employability skills, and introduction to material handling. Also includes as an elective an introduction to basic rigging.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G, BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109A NCCER Core Basic Craft Safety**

.75 credit hours, .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core basic craft safety. Includes safety and hazard recognition, elevated work and fall protection, struck-by and caught-in-between hazards, energy release hazards, personal protective equipment (PPE), and job-site hazards.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109B NCCER Core Basic Construction Math**

.75 credit hours, .75 periods (.75 lec.)

National Center for Construction Education and Research (NCCER) Core basic construction math. Includes whole numbers, fractions, the decimal system, measuring length, converting between the imperial and metric systems, and basic angles and geometric shapes.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109C NCCER Core Introduction to Hand Tools**

.75 credit hours, .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core introduction to hand tools. Includes types of hand tools, measurement and layout tools, cutting and shaping tools, and common hand tools used by skilled craft workers.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications. BCT 109D NCCER Core Introduction to Power Tools

.75 credit hours, .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core introduction to power tools. Includes power drills, impact wrenches, power saws, grinders and their associated attachments, and miscellaneous power tools commonly used by skilled craft workers.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109E NCCER Core Basic Construction Drawings**

.75 credit hours, .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core basic construction drawings. Includes types of construction drawings, drawing components, drawing elements, dimensions and measuring scales.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109F NCCER Core Basic Communications Skills**

.5 credit hours, .6 periods (.4 lec., .2 lab)

National Center for Construction Education and Research (NCCER) Core basic communications skills. Includes basic verbal communications, active listening, basic reading and basic writing skills employed by skilled craft workers.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109G NCCER Core Basic Employability Skills**

.5 credit hours, .5 periods (.5 lec.)

National Center for Construction Education and Research (NCCER) Core basic employability skills. Includes opportunities in the construction industry, critical thinking and problem solving, and relationship and social skills.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109H NCCER Core Introduction to Materials Handling**

.5 credit hours, .6 periods (.4 lec., .2 lab)

National Center for Construction Education and Research (NCCER) Core introduction to materials handling. Includes principles of materials handling and materials handling equipment.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 109I NCCER Core Introduction to Basic Rigging**

.5 credit hours, .6 periods (.4 lec., .2 lab)

National Center for Construction Education and Research (NCCER) Core introduction to basic rigging. Includes basic rigging hardware and emergency communications.

*Information:* BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

**BCT 111 Basic Safety for the Building Trades**

1 credit hour, 1 periods (1 lec.)

Introduction to federal safety training standards. Includes employer responsibility-employee right to know, personal protective equipment, material handling, hand and power tools, electrical hazards, hazards communication standards, fire safety, scaffolds, fall protection, cranes, and stairways and ladders.

*Information:* Successful completion of this course qualifies the student for the 10 hour safety training card.

**BCT 112 Construction Mathematics, Communication and Employability**

1 credit hour, 1 periods (1 lec.)

Introduction to basic mathematics concepts and employability in the construction industry. Includes whole numbers, measurements, fractions, decimals, conversion process, metric system, construction geometry, reading, writing, listening and speaking skills, employability in the construction business, critical thinking and computer skills, relationship skills, and workplace issues.

*Information:* Mathematics assessment test is required before enrolling in this course.

**BCT 113 Hand and Power Tools**

1 credit hour, 1 periods (1 lec.)

Selection and safety procedures. Includes trades terms, hand tool, and power tool use to specific jobs in the construction industry.

**BCT 114 Blueprint Reading**

1 credit hour, 1 periods (1 lec.)

Basic concepts of blueprints. Including terms and symbols, components, measuring tools, line types and symbols, abbreviations, grid lines, plan locations, and dimensions, production techniques, and blueprint reading parts and locations.

**BCT 115 Basic Rigging**

1 credit hour, 1 periods (1 lec.)

Rigging hardware and equipment. Includes safety, rigging equipment, inspection, crane hand signals, estimating an object, common rope knots, types of derricks and cranes, rigging and moving equipment use, and handling hazardous material.

**BCT 120 Blueprint Reading for Construction**

3 credit hours, 3 periods (3 lec.)

Residential and light commercial blueprint reading. Includes blueprint symbols and terminology, construction materials, applications and specifications for commercial buildings, light frame and brick veneer construction, and appropriate mathematics.

*Recommendation:* Completion of BCT 107 before enrolling in this course. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* BCT 111, 113, and 114 substitute for BCT 107.

**BCT 123 Concrete/Masonry**

3 credit hours, 5 periods (1 lec., 4 lab)

Basic concepts and materials for concrete construction, finishing, and masonry work. Includes trade terminology, composition and characteristics of concrete, uses of concrete as a building material, effects of craftsmanship on finished concrete, concrete construction process, site operations and work set-up, history of masonry, and modern masonry materials and methods.

**BCT 130 EPA Clean Air Act: Section 608**

1 credit hour, 1 periods (1 lec.)

Freon certification preparation. Includes basics of refrigerant bearing equipment, ozone depletion and the new legislation, technician categories covered on the certification examination, and certification testing.



**BCT 132 Residential and Industrial HVAC I**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to materials and procedures for heating, ventilating, and air conditioning (HVAC). Includes trade mathematics, copper and plastic piping practices, soldering and brazing, ferrous metal piping practices, basic electricity, introduction to cooling and heating, and air distribution systems.

*Prerequisite(s):* BCT 105 and 107.

*Information:* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**BCT 133 Residential and Industrial HVAC II**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to commercial airside systems. Includes chimneys, vents, flues, hydronic systems, air quality equipment, leak detection, evacuation, recovery, charging, alternating current, and basic electronics.

*Prerequisite(s):* BCT 132.

**BCT 134 Residential and Industrial HVAC III**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to the principles of heat transfer, humidity, filtering, and energy saving devices used in HVAC systems. Includes accessories and optional equipment, metering devices, compressors, heat pumps, leak detection, evacuation, recovery, and charging.

*Prerequisite(s):* BCT 133.

**BCT 135 National Electrical Code Residential Wiring Applications**

4 credit hours, 6 periods (2 lec., 4 lab)

Electrical wiring and installation conforming to National Electrical Code requirements. Includes grounded systems, requirements for over-current protection of conductors, ampacity criteria, installing over-current protection of conductors, installing services, installing motors and transformers, remote control and signaling circuits, and installing structured wiring in homes and offices.

*Prerequisite(s):* BCT 172.

**BCT 145 Carpentry I**

4 credit hours, 6 periods (2 lec., 4 lab)

Theories and concepts for carpentry. Includes orientation to the trade, wood building materials, fasteners and adhesive, hand and power tools, floor systems, wall, ceiling, and roof framing, and windows and exterior doors.

*Prerequisite(s):* BCT 105 and 107 or concurrent enrollment.

*Information:* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**BCT 146 Woodworking I**

3 credit hours, 5 periods (2 lec., 3 lab)

Concepts and procedures for working with hardwoods. Includes introduction to hardwoods, measuring hardwoods, use of hardwoods, pressure treated wood, hardwood preparation, ripping wood, miter cuts, cross cuts, job site safety, gluing and clamping, veneers, curves and circles, dados and rabbets, and smoothing wood.

**BCT 147 Woodworking II**

3 credit hours, 5 periods (2 lec., 3 lab)

A continuation of BCT 146. Advanced topics in woodworking. Includes safety practices; designing and planning; measuring and cutting; planing, chiseling, and sanding; butt, biscuit and dowel joints; rabbit joints; dado joints; lap joints; miter joints; mortise-and-tenon joint; veneers; using fasteners, dovetail joints and case casework; and applying stains and clear finishes.

*Prerequisite(s):* BCT 146.

*Information:* Prerequisite(s) may be waived with consent of instructor.

**BCT 148 Cabinetmaking I**

3 credit hours, 5 periods (2 lec., 3 lab)

Concepts and procedures for fine woodworking practices. Includes introduction to cabinetmaking, cabinetry styles, human factors, working drawings, lumber and millwork, manufactured panel products, veneers and plastic overlays, hardware, health and safety, measuring and laying out materials, stationary power machines, hand and portable power tools, surfacing and shaping, and building a basic cabinet.

*Prerequisite(s):* BCT 147.

**BCT 149 Cabinetmaking II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of BCT 148. Includes turning, joint making, abrasives and sanding machines, gluing and clamping, bending and laminating wood, overlaying and inlaying veneer, installing plastic laminates, advanced case construction, doors, drawers, applying finishing materials, kitchen cabinets, industrial production cabinetmaking, and employment in cabinetmaking.

*Prerequisite(s):* BCT 148.

*Information:* Prerequisite may be waived with appropriate carpentry/cabinetmaking skills. See an instructor or department chair for information.

**BCT 150 Plumbing Basics**

4 credit hours, 6 periods (2 lec., 4 lab)

Theories and concepts for plumbing and pipe fitting. Includes physics for plumbers, plumbing materials, water supplies, drainage, sewage disposal, pipe joint connections, pipe fittings, rough-in, valves and faucets, and fixtures.

*Prerequisite(s):* BCT 111.

**BCT 153 Finishing Techniques in Cabinet and Furniture Making**

3 credit hours, 5 periods (2 lec., 3 lab)

Wood finishing techniques for cabinet and furniture making. Includes safe and effective use of a variety of wood finishes and finishing equipment, reasons for finishing wood, tools for applying finishes, oil finishes, wood stains, pore fillers, introduction to film finishes, shellac, lacquer, varnish, water-based finishes, conversion finishes, choosing a finish, "finishing" the finish, caring for wood finishes, repairing finishes, finishing different woods, and strippers.

*Recommendation:* Woodworking and cabinetmaking experience helpful. See a BCT faculty member for assistance.

**BCT 159 Furniture Design and Construction**

3 credit hours, 5 periods (2 lec., 3 lab)

Wood furniture-making techniques for hobbyists and professionals. Includes basic material; tools and equipment safety and use; basic techniques and joint construction; advanced areas of furniture construction; metal fittings/fasteners and their application; advanced techniques in furniture making; drafting and workshop geometry; furniture designs and construction details; and restoration, repairs, and wood finishing.

*Prerequisite(s):* BCT 147.

**BCT 160 Roof Mounting for Solar Installations**

4 credit hours, 4 periods (4 lec.)

Techniques and skills for Photovoltaic (PV) installers to size, design, and install solar panels. Includes an introduction to different types of mounting systems. Also includes site location of panels, orientation to house, shading at the site, weather, roof materials, soil and load bearing capacity.

**BCT 172 Electrical I**

4 credit hours, 6 periods (2 lec., 4 lab)

Concepts and procedures for building and construction electrical training. Includes safety, conduit bending, electrical theory, test equipment, National Electric Code, raceways, boxes, and fittings, print reading, and wiring applications.

*Prerequisite(s):* BCT 105 and 107 or concurrent enrollment.

*Information:* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**BCT 173 Electrical II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 172. Includes alternating current, motor installation, grounding of structures and equipment, conduit bending, electrical boxes and fittings, and conductor installations.

*Prerequisite(s):* BCT 172.

**BCT 174 Electrical III**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 173. Includes conductor installation, cable tray, conductor termination and splices, electric service installation, circuit breakers and fuses, contactors and relays, and electrical lighting.

*Prerequisite(s):* BCT 173.

**BCT 181 Residential and Industrial Plumbing I**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to common types of piping, their proper fitting, fixtures, and distribution systems. Includes introduction to the plumbing trade and drawings; plastic, copper, cast-iron, and carbon steel piping; fixtures and faucets; introduction to drainage, waste, and vent (DWV) systems; and water distribution systems.

*Prerequisite(s):* BCT 105 and 107.

*Information:* BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**BCT 182 Residential and Industrial Plumbing II**

4 credit hours, 6 periods (2 lec., 4 lab)

Concepts and practices for plumbing. Includes offsets around obstructions, reading commercial drawings, installing and testing drainage, waste, and vent (DWV) piping system, installing roof, floor and area drains, and servicing various types of valves.

*Prerequisite(s):* BCT 181.

**BCT 183 Residential and Industrial Plumbing III**

4 credit hours, 6 periods (2 lec., 4 lab)

Concepts and installation procedures for water service, fixtures, and appliances. Includes installing and testing water supply piping, fixtures, valves, and faucets; electrical applications; water heaters; fuel gas systems; and servicing of fixtures, valves, and faucets.

*Prerequisite(s):* BCT 182.

**BCT 184 National Electrical Code I**

3 credit hours, 3 periods (3 lec.)

Requirements for the installation of electrical conductors, equipment, raceways, cables, and special occupancies. Includes introduction to the National Electrical Code, wiring and protection, wiring methods and materials, and equipment for general use.

*Prerequisite(s):* BCT 172.

*Information:* BCT 184 and 284 together provide preparation for the National Electrical Code certification exam.

**BCT 190 Fieldwork for Construction**

1-8 credit hours, 5-40 periods (5-40 lab)

Supervised fieldwork experience on a specific construction project at the project site.

*Prerequisite(s):* BCT 105 and 107.

*Information:* May be taken two times for a maximum of sixteen credit hours. If this course is to be repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. BCT course work or field experience will be necessary for success in this course. See a BCT instructor or department chair for more information. BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

**BCT 202 Construction Business Management**

3 credit hours, 3 periods (3 lec.)

Overview of construction business and project management. Includes planning and organizing, risk management, project management, estimating, scheduling, environmental and safety laws, employer obligations, financial management, contract law, and Arizona state requirements for contractors.

**BCT 204 Construction Surveying**

3 credit hours, 5 periods (2 lec., 3 lab)

Principles and techniques of construction surveying. Includes taping, leveling, transit, contour and topographic mapping, and construction surveying.

*Prerequisite(s):* Within the last three years: MAT 086 with a C or better or MAT 089A through Module 15 or GTM 105 with a C or better or required score on the Mathematics assessment test.

*Recommendation:* Completion of BCT 120 before enrolling in this course. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**BCT 231 Residential and Industrial HVAC IV**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 134. Includes refrigerants and oil, compressors, metering devices, retail refrigeration systems, commercial hydronic systems, and steam systems.

*Prerequisite(s):* BCT 134.

**BCT 232 Residential and Industrial HVAC V**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 231. Includes planned maintenance, water treatment, troubleshooting electronic controls, troubleshooting oil heating, troubleshooting heat pumps, and troubleshooting accessories.

*Prerequisite(s): BCT 231.*

**BCT 233 Residential and Industrial HVAC VI**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 232. Includes construction drawings and specifications, indoor air quality, energy conservation equipment, and building management systems.

*Prerequisite(s): BCT 232.*

**BCT 234 Residential and Industrial HVAC VII**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 233. Includes water treatment, system startup and shutdown, heating and cooling system design, and commercial and industrial refrigeration systems.

*Prerequisite(s): BCT 233.*

**BCT 235 National Electric Code Commercial Wiring Applications**

4 credit hours, 6 periods (2 lec., 4 lab)

Commercial electrical wiring and installation practices conforming to the National Electric Code. Includes commercial building plans, specifications, and drawings, electrical loads and branch circuits, switches and receptacles, branch circuit installations, motor and appliance circuits, feeders, special systems and circuits, panelboard selection and installation, electric service equipment, lamps and luminaires, emergency and standby power systems, and overcurrent protection.

*Prerequisite(s): BCT 135.*

**BCT 236 Residential and Industrial Plumbing IV**

4 credit hours, 6 periods (2 lec., 4 lab)

Concepts that apply to plumbing installations. Includes applied math, sizing water supply piping, potable water treatment, and backflow preventers.

*Prerequisite(s): BCT 183.*

**BCT 237 Residential and Industrial Plumbing V**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 236. Includes types of venting; sizing DWV and storm systems; sewage pumps and sump pumps; corrosive resistant waste piping; and compressed air.

*Prerequisite(s): BCT 236.*

**BCT 238 Residential and Industrial Plumbing VI**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 237. Includes concepts and practices essential to competitive and successful plumbing businesses. Also includes business principles for plumbers, introductory skills for the crew leader, water pressure booster and recirculation systems, indirect and special waste, and hydronic and solar heating systems.

*Prerequisite(s): BCT 237.*

**BCT 239 Residential and Industrial Plumbing VII**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 238. Includes codes; servicing piping systems, fixtures, and appliances; private water supply well systems; private waste disposal systems; swimming pools and hot tubs; and plumbing for mobile homes and travel trailers.

*Prerequisite(s): BCT 238.*

*Information: BCT coursework or field experience will be necessary for success in this course. See a BCT instructor or department chair for more information.*

**BCT 245 Carpentry II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 145. Includes techniques for reading construction drawings and specifications, site layout, measurement, and leveling, concrete materials and concrete reinforcement materials, construction of forms for footings and on-grade slabs, and concrete forms.

*Prerequisite(s): BCT 145.*

**BCT 265 Sustainability for Building Trades**

3 credit hours, 3 periods (3 lec.)

Fundamentals of sustainable design. Includes green building practices and implementation. Also includes green building concepts, site and building planning and development, materials, strategies, cost benefit analysis, and practical applications in the current construction business environment.

**BCT 271 Electrical IV**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 174. Includes load calculations-branch and feeder circuits, conductor selection and calculations, practical applications of lighting, hazardous locations, and overcurrent protection.

*Prerequisite(s):* BCT 174.

**BCT 272 Electrical V**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 271. Includes distribution equipment, transformers, commercial electrical services, motor calculations, voice, data, and video, and motor controls.

*Prerequisite(s):* BCT 271.

**BCT 273 Electrical VI**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 272. Includes load calculations-feeders and services, health care facilities, standby and emergency systems, basic electronic theory, fire alarm systems, and specialty transformers.

*Prerequisite(s):* BCT 272.

**BCT 274 Electrical VII**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of BCT 273. Includes advanced controls, signaling systems, specialty transformers, standby and emergency systems, welding machines, HVAC controls, and heat tracing and freeze protection.

*Prerequisite(s):* BCT 273.

**BCT 284 National Electrical Code II**

3 credit hours, 3 periods (3 lec.)

Continuation of BCT 184. Includes introduction to the National Electrical Code, special occupancies, special equipment, special conditions, and communication systems.

*Prerequisite(s):* BCT 184.

*Information:* BCT 184 and BCT 284 together provide preparation for the National Electrical Code certification exam.

**BCT 286 International Residential Code (IRC) I**

3 credit hours, 3 periods (3 lec.)

Requirements of the major systems of residential building construction (other than commercial). Includes administration, definitions, building planning, foundations, floors, wall construction, wall covering, roof-ceiling construction, roof assemblies, chimneys and fireplaces.

*Recommendation:* Completion of general construction field experience before enrolling in this course.

**BCT 287 International Residential Code (IRC) II**

3 credit hours, 3 periods (3 lec.)

Continuation of BCT 286. Includes energy efficiency, mechanical systems, plumbing systems, electrical systems, and referenced standards.

*Prerequisite(s):* BCT 286.

## Business

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### **BUS 100 Introduction to Business**

3 credit hours, 3 periods (3 lec.)

Introduction to Business Principles of business operations in the private enterprise system. Includes contemporary business and its environment, structure of American business, management principles of the organization, people, and production, marketing management, information systems and accounting, and financing the enterprise.

### **BUS 125 eCommerce**

3 credit hours, 3 periods (3 lec.)

Introduction to conducting business on the Internet. Includes electronic commerce terminology, locating information, business applications, legal issues and security, and web site components and connectivity. Also includes marketing on the Internet, career opportunities, future developments, and building and operating a successful e-commerce store.

### **BUS 148 Ethics in the Workplace**

3 credit hours, 3 periods (3 lec.)

Ethical principles in decision making applied to the business and industry workplace. Includes ethical issues in decision making, ethical frameworks for decisions, personal values and ethical priorities, ethics in business and industry, ethical standards in the workplace, ethical choices, application of ethical principles, social and cultural values applied to decisions, and workplace culture.

### **BUS 151 Mathematics of Business**

3 credit hours, 3 periods (3 lec.)

Applying mathematical procedures, using algebraic techniques, critical thinking, and problem-solving methods for practical utility in the business environment. Includes math review; bank records; payroll; trade and cash discounts; markup and markdown; simple and compound interest; present and future value; annuities and sinking funds; consumer credit; depreciation; inventory, overhead, and turnover; financial statements; insurance; taxes; and stocks and bonds.

*Prerequisite(s):* MAT 086 or completion of Module 22 in MAT 089A or 089B or satisfactory score on the Mathematics assessment test.

### **BUS 205 Statistical Methods in Economics and Business**

3 credit hours, 3 periods (3 lec.)

Introduction to statistical concepts and methods of business. Includes statistics, data, and statistical thinking; methods for describing sets of data, probability, sampling distributions, inferences based on single sample and two samples; estimation with confidence intervals and tests of hypothesis; correlation and regression; time series; design of experiments; analysis of variance (ANOVA), and categorical data analysis.

*Prerequisite(s):* MAT 212 or 220.

*Information:* MAT 172 or 173 may be accepted as the prerequisite if taken prior to Fall 2013. Basic Excel knowledge is required before enrolling in this course.

### **BUS 210 International Business**

3 credit hours, 3 periods (3 lec.)

Introduction to international business, focusing on the importance of cultural, economic, legal, political, sociological, and strategic complexities that emerge when business activities transcend international borders. Includes the terminology of international business and the basic do's and don'ts within the various foreign business societies.

*Recommendation:* Completion of BUS 100 before enrolling in this course.

### **BUS 220 Legal Environment of Business**

3 credit hours, 3 periods (3 lec.)

Overview of the impact of law, ethics and corporate responsibility in business. Includes basic concepts of law, structure, characteristics, the administration thereof, and continues through the many facets of business and the law including without limitation, formation, operation, ethics, corporate responsibility, agency, contracts, and government regulation.



**BUS 277 Analytical Methods in Business**

4 credit hours, 4 periods (4 lec.)

Business statistic topics and applications. Includes descriptive measures and continuous probability distributions; sampling distributions, hypothesis testing, statistical inference, analysis of variance, correlation and regression with an emphasis placed on application to business cases using data rich case analysis. Also includes Excel and SPSS workshops for statistical analyses on business and economic cases accompanied by sample reports incorporating test results, its conclusions and the communication of such conclusions.

*Prerequisite(s):* MAT 212 and BUS 205

*Recommendation:* CIS 120

*Information:* Basic Excel knowledge is required before enrolling in this course. CIS 120 meets this requirement.

**BUS 296 Independent Study in Business**

1-3 credit hours, 1-3 periods (1-3 lec.)

Independent study projects or special interest areas in business under the supervision of a faculty member.

*Prerequisite(s):* BUS 100.

*Information:* May be taken two times for a maximum of six credit hours.

**BUS 299 Co-op: Business**

1 credit hour, 1 periods (1 lec.)

Principles of job success. Preparation of job-related objectives, individual progress and advancement on the job, labor relations, role of management, and evaluation of student work experience. Emphasis on attitude adjustment.

*Corequisite(s):* BUS 299WK

*Information:* May be taken two times for a maximum of two credit hours.

**BUS 299WK Co-op Work: Business**

1-8 credit hours, 5-40 periods (5-40 lab)

A supervised cooperative work program for students in an occupation related area. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

*Corequisite(s):* BUS 299

*Information:* May be taken two times for a maximum of sixteen credit hours.

## Chemistry

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**CHM 121IN Chemistry and Society**

4 credit hours, 6 periods (3 lec., 3 lab)

Basic chemistry and its relationship to everyday experiences. Includes classification and structure of matter; radioactivity; compound formation from elements; and electron transfer. Also includes acids, bases, salts, the liquid state, the gas state, and special topics.

*Information:* Designed for non-science majors, education majors, and the general public. *Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**CHM 130IN Fundamental Chemistry**

5 credit hours, 7 periods (4 lec., 3 lab)

Inorganic Chemistry as a basis for the study of some life processes. Includes the classification, structure and general chemical behavior of inorganic matter.

*Prerequisite(s):* MAT 092 with a C or better, or Module 31 in MAT 089A or 089B, or required score on mathematics assessment test.

*Information:* Adapted to the needs of students in allied health programs. IN is the integrated version of the course and lab taught simultaneously.

**CHM 140IN Fundamental Organic and Biochemistry**

5 credit hours, 7 periods (4 lec., 3 lab)

Continuation of CHM 130IN. Organic chemistry as the basis for the study of some important life processes. Includes the classification, structure, and general chemical behavior of organic and biochemical systems.

*Prerequisite(s):* A grade of C or better in CHM 130IN.

*Information:* Adapted to the needs of students in nursing and other health professions. IN is the integrated version of the course with the lecture and lab taught simultaneously.

**CHM 151IN General Chemistry I**

5 credit hours, 7 periods (4 lec., 3 lab)

Introduction to the foundations of chemistry for upper-level sciences and engineering. Includes atomic structure, chemical bonding, reaction stoichiometry, behavior of gases, and reactions in solutions. Also includes an introduction to thermochemistry.

*Prerequisite(s):* With a grade of C or better: MAT 151 and either CHM 130IN or placement into CHM 151 on the Chemistry assessment test.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously. *Information:* High school chemistry with a grade of C or better will also meet chemistry prerequisite.

**CHM 152IN General Chemistry II**

5 credit hours, 7 periods (4 lec., 3 lab)

Continuation of CHM 151IN. Includes emphasis on certain chemical concepts such as chemical kinetics, equilibrium, acids and bases, thermodynamics, and electrochemistry.

*Prerequisite(s):* With a grade of C or better: MAT 151 and CHM 151IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**CHM 195 Introduction to Research in Chemistry**

4 credit hours, 4 periods (4 lec.)

Introduction to the methods of research in chemistry. Includes scientific laboratory procedures, experimental design, scientific writing, scientific ethics, and current research in working laboratories.

*Information:* Consent of instructor is required before enrolling in this course.

**CHM 196LB Independent Studies in Chemistry**

1-4 credit hours, 3-12 periods (3-12 lab)

Laboratory projects varying with students' interests and reasons for enrolling.

**CHM 235IN General Organic Chemistry I**

5 credit hours, 7 periods (4 lec., 3 lab)

Fundamentals of organic chemistry. Includes classification, occurrence, synthesis, analysis, Stereochemistry, and reaction mechanisms of important classes of organic compounds; namely alkanes, cycloalkanes, alkenes, alkynes, and alkyl halides. Also includes application of the organic chemistry concepts addressed, using a wide range of laboratory apparatus and procedures. Also focuses on laboratory safety skills and computer software applications related to chemistry.

*Prerequisite(s):* CHM 152IN with a grade of C or better.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**CHM 236IN General Organic Chemistry II**

5 credit hours, 7 periods (4 lec., 3 lab)

Continuation of CHM 235IN. Includes remaining classes of organic compounds, specifically dienes, alcohols, ethers and epoxides, aldehydes, ketones, acids, acid derivatives, aromatics, and nitrogen containing compounds and an introduction to biomolecules and/or polymers. Also includes an emphasis on synthesis and use of chemical and instrumental methods as means of identification while using a wide range of laboratory apparatus and procedures. Also focuses on laboratory safety skills and computer software applications related to chemistry.

*Prerequisite(s):* CHM 235IN with a grade of C or better.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**CHM 290 Chemistry Internship**

1-4 credit hours, 1-4 periods (1-4 lec.)

Internship and work experience in a science field or laboratory. Includes setting, achieving, and evaluating goals for hands-on learning experiences in sciences. Also includes development of skills and knowledge needed to work in a science field or laboratory.

*Information:* Consent of Internship instructor is required before enrolling in this course.

**CHM 295LB Independent Research in Chemistry**

1-4 credit hours, 3-12 periods (3-12 lab)

Experience in scientific laboratory research. Specific content to be determined by student and instructor.

*Information:* One semester of chemistry and consent of instructor is required before enrolling in this course. *Information:* May be taken three times for a maximum of twelve credit hours.

## Child Development Associate

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### CDA 102 The Child's Total Learning Environment

1 credit hour, 1 periods (1 lec.)

Analysis of the total learning environment for children birth through age 8. Includes establishing an educational learning environment, value of a child-centered learning environment, the indoor and outdoor environment, developmentally appropriate learning centers, and play materials. Also includes the teacher's role and responsibility within the learning environment, and utilizing the community as an integral part of the child's total learning environment.

*Information: All CDA courses require college-level reading and writing.*

### CDA 103 Curriculum Planning and Schedule Development

1 credit hour, 1 periods (1 lec.)

Strategies for the creation of lesson plans and schedules for use in the classroom. Includes preparation of group and individualized lesson plans and schedules based on children's abilities, planning as a cooperative effort, foundations of events and activities, balancing variety in the classroom, individual center's philosophy in the planning process, flexibility in planning, and assessment and evaluation.

*Information: All CDA courses require college-level reading and writing.*

### CDA 112 Guidance Principles for Encouraging Self-Discipline

1 credit hour, 1 periods (1 lec.)

Development of guidelines for using positive discipline techniques in the classroom. Includes role modeling, social development and appropriate actions, program influences on children's behaviors and relationships, rules and limits, and difference between discipline and punishment.

*Information: All CDA courses require college-level reading and writing.*

### CDA 114 Collecting, Organizing and Using Teaching Aids

1 credit hour, 1 periods (1 lec.)

Survey of several different types of teaching aids used in the early care and education environment for children birth through age eight. Includes identifying what belongs in a developmentally appropriate learning environment for children, how to sort and organize teaching aids according to types, how to incorporate those teaching aids into the various curricula areas of the program and sharing with families through reciprocal relationships. Also includes various types of teaching aids such as individual children's portfolios, activity card file collection, picture and poster file, media resources, reference materials, professional literature, and community resources.

*Information: All CDA courses require college-level reading and writing.*

### CDA 121 Techniques for Observing Children

1 credit hour, 1 periods (1 lec.)

Development of techniques for observing, recording, and interpreting behavior in children. Includes purpose of observation, observation and collecting information, observation and assessment techniques, interpreting observations, individual documentation, observation-based curriculum planning, behavioral and developmental milestones, and sharing observations and assessments professionally.

*Information: All CDA courses require college-level reading and writing.*

### CDA 126 Literature for Preschool Children

2 credit hours, 2 periods (2 lec.)

Survey of materials and techniques for the selection and evaluation of children's literature. Includes the importance of literature for children, creating a developmentally appropriate environment for young readers, general categories of books, importance of pictures/illustrations and storytelling, reading aloud to children, creating a story with children and the teacher's role.

*Information: All CDA courses require college-level reading and writing. all CDA classes.*

### CDA 138 Building Parent and Classroom Connections

3 credit hours, 3 periods (3 lec.)

Analysis of the specific attitudes, philosophies and practical techniques in building relationships with families for teachers. Includes families today, overview of family involvement, benefits of and barriers to teacher family partnerships, at the beginning with parents and children, informal communications with families, parent teacher conferences, home visits, families in the classroom, community involvement, working with families from diverse backgrounds and families in particular circumstances, resolving troublesome attitudes and behaviors, and parent involvement programs that work.

*Information: All CDA courses require college-level reading and writing.*

**CDA 155 Understanding How Children Learn and Develop**

1 credit hour, 1 periods (1 lec.)

Exploration of the cognitive learning progression of children birth through age 8. Includes introduction of various theorists, ways children learn, and the family and community influences and support toward a child's learning and the teacher's role.

*Information: All CDA courses require college-level reading and writing.*

**CDA 161 Principles of Social Competence**

1 credit hour, 1 periods (1 lec.)

Analysis of self-concept in children. Includes self concept/self-image, primary factors, uniqueness of each child, environment, accepting and expressing feelings appropriately, observation, expressing emotions, activities for expression of feelings, and exploration of feelings.

*Information: All CDA courses require college-level reading and writing.*

**CDA 170 Ages and Stages of Young Children: Prenatal through Toddler**

2 credit hours, 2 periods (2 lec.)

Examination of the developmental stages pre-birth to age three years. Includes general principles and theories of development, biological and environmental factors, conception to birth, infant developmental, toddler developmental milestones, issues in infant care, and toddler care issues.

*Information: All CDA courses require college-level reading and writing.*

**CDA 173 Ages and Stages of Young Children: The Preschool Years**

1 credit hour, 1 periods (1 lec.)

Examination of the developmental stages of preschool children ages 3 to 5 years. Includes general principles and theories of development, physical characteristics, pattern of motor skill development, cognitive development, socio-emotional development, developmental concerns and challenges and family involvement.

*Information: All CDS courses require college-level reading and writing.*

**CDA 211 Small and Large Muscle Development**

2 credit hours, 2 periods (2 lec.)

Examination of small and large muscle development and its relationship to cognitive learning. Includes overview of small/large muscle development, specific sequence, orderly process, practice, characteristics of the large and small muscle, activities and environment to promote muscle development, supervision and guidance, and observation and assessment. Also includes a variety of spontaneous and planned activities.

*Information: All CDA courses require college-level reading and writing.*

**CDA 222 Elements of Children's Culture**

1 credit hour, 1 periods (1 lec.)

Examination of the ways culture affects children's learning. Includes an overview of multiculturalism, cross-cultural competence, responsive learning environments, and family and community involvement.

*Information: All CDA courses require college-level reading and writing.*

**CDA 224 Learning Theories and Cognitive Development Applications**

2 credit hours, 2 periods (2 lec.)

Analysis of how young children grow and learn. Includes egocentrism, cognitive and memory development, concept formation and problem solving skills, and sharing resource with parents.

*Information: All CDA courses require college-level reading and writing.*

**CDA 271 Professionalism in Childcare**

1 credit hour, 1 periods (1 lec.)

Analysis of the history and ethics of early childhood professionals. Includes defining professionalism; examining the past, present and future; exploring professional values and ethics; continuing professional growth/education; and becoming an advocate for children and their families.

*Information: All CDA courses require college-level reading and writing.*

**CDA 275 Transitions**

1 credit hour, 1 periods (1 lec.)

Examination of the nature of transitions in the classroom. Includes introduction to transitions, selection of transitional activities, and transitions as part of the curriculum.

*Information: All CDA courses require college-level reading and writing.*

## Chinese

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### CHI 101 Elementary Chinese (Mandarin) I

5 credit hours, 5 periods (5 lec.)

Introduction to the Mandarin Chinese language. Includes basic phonetic system of the Chinese language, basic Chinese grammar structures, reading simple texts, basic Chinese writing and Chinese culture. Also includes a foundation in listening, speaking, reading, writing, and cultural awareness.

### CHI 102 Elementary Chinese (Mandarin) II

5 credit hours, 5 periods (5 lec.)

Continuation of CHI 101. Includes additional phonetic system of Chinese language, additional selection of grammar structures, additional reading Chinese, additional writing Chinese, and additional Chinese culture. Also includes an additional level of listening, speaking, reading, writing, and cultural awareness.

*Prerequisite(s):* CHI 101.

### CHI 201 Intermediate Chinese I

5 credit hours, 5 periods (5 lec.)

Continuation of CHI 102. Includes intermediate selection of grammar structures, oral and aural transactions, political, economic, and social vocabulary in readings and writings, intermediate literary works, and norms, values, and beliefs.

*Prerequisite(s):* CHI 102.

### CHI 202 Intermediate Chinese II

5 credit hours, 5 periods (5 lec.)

Continuation of CHI 201. Includes additional intermediate selection of grammar structures, intermediate oral, aural, and written transactions, response to complex topics, additional norms, values, and beliefs, and Chinese history and cultural aspects.

*Prerequisite(s):* CHI 201.

## Clinical Research Coordinator

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### CRC 101 Foundations of Clinical Research

3 credit hours, 3 periods (3 lec.)

A comprehensive introduction to the clinical research process and practice. Includes history and evolution of clinical research, phases of clinical trials, protection of human subjects, clinical research team personnel and their roles, and the responsibilities of clinical research organizations. Also includes medical, clinical research, and standard pharmaceutical/pharmacological terms commonly used in clinical research; and issues of sensitivity, diversity, and ethics as applied to clinical research.

*Prerequisite(s):* Completion of or concurrent enrollment in: BIO 160IN or 201IH, CSA 100, MAT 097, and WRT 101.

*Information:* Introductory class for program core.

### CRC 110 Clinical Research Common Terminology

3 credit hours, 3 periods (3 lec.)

Study of common terminology used in clinical research profession in order to properly report adverse events in universally understood terminology. Includes research specific terminology and medical terminology used in order to collect a thorough medical history, during an Adverse Event report, and throughout a clinical trial. Also includes common and medical terminology used in clinical research and other health care professions. In addition, the Medical Dictionary for Regulatory Activities (MedDRA) and the Common Terminology Criteria for Adverse Events (CTCAE) will be explored.

*Prerequisite(s):* BIO 160IN or 201IH.

*Information:* BIO 201IN may be substituted for BIO 201IH to meet the prerequisite requirement.

### CRC 201 Clinical Research Regulatory Compliance

3 credit hours, 3 periods (3 lec.)

Introduction to the Food and Drug Administration (FDA) regulatory process and regulatory requirements for clinical research. Includes an overview of the role and function of the FDA, the drug development process, preparation and maintenance of an Investigational New Drug (IND), regulatory documentation, safety reporting, and Good Clinical Practices (GCPs).

*Recommendation:* Completion or concurrent enrollment in CRC 101.

**CRC 230 Introduction to Clinical Research Study Protocol**

2 credit hours, 2 periods (2 lec.)

Introduction to the scientific development of research protocols and related regulatory requirements. Includes differentiations among research design types, rules for writing protocols, and ethical considerations relative to research protocols.

*Prerequisite(s):* CRC 101 or concurrent enrollment.

*Recommendation:* Completion of or concurrent enrollment in CRC 201.

**CRC 240 Pharmacology for Clinical Trials**

4 credit hours, 4 periods (4 lec.)

Essential drug knowledge and facts and their application in clinical research. Includes common medical diagnoses and their related drug treatments (brand name and generic); what constitutes a drug; the effects and modes of action of drugs upon the body (pharmacodynamics); method and rate of excretion and duration of the effect of drugs (pharmacokinetics); drug side effects; drug-drug interactions; and how to find and interpret drug-related information from primary literature. Also includes an overview of the drug development process from bench through post-approval marketing.

*Prerequisite(s):* CRC 101.

**CRC 250 Clinical Research Site Coordination and Management**

3 credit hours, 3 periods (3 lec.)

Introduction to the elements involved in implementing and managing a clinical trial from the perspective of the research site staff/team. Includes the identification and evaluation of sites and investigators, on-site budget management, and the coordination of subject participation.

*Prerequisite(s):* CRC 101, 201, 230.

**CRC 260IN Lab Skills and Professional Practice**

3 credit hours, 5 periods (2 lec., 3 lab)

Clinical skills training to prepare for clinical research coordinator internship, with emphasis on applying clinical research project coordination concepts and practices in a simulated research setting. Includes research subject communication techniques, medical history review, adverse events, vital signs, EKG procedures, blood collection and specimen processing, storage and shipping. Also includes application of clinical research project coordination practices related to a protocol; research and medical terminology; recruitment, enrollment and retention practices; informed consent; detection of errors within study reports and casework; documentation of medications, adverse events and serious adverse events; review of study subject's file data for completeness and accuracy; and regulatory and legal mandates related to clinical trials.

*Prerequisite(s):* CRC 240 and 250.

**CRC 270 Research Management for Sponsors and CRO's**

3 credit hours, 3 periods (3 lec.)

Introduction to the elements involved in implementing, monitoring and managing a clinical study from the perspective of the Sponsor or Contract Research Organization (CRO). Includes overall project planning, development of study goals, preparation of budget and contracts, implementation of monitoring visits, and effective management of research sites.

*Prerequisite(s):* CRC 250.

**CRC 291 Clinical Research Coordinator Internship**

1-3 credit hours, 3-9 periods (3-9 lab)

Supervised work experience in a clinical research setting. Includes emphasis on the observation and enhancement of professional and management skills team communication and interaction, and the application of research principles, procedures, protocols, and regulations in the workplace. Student will rotate through a variety of research sites agreed upon by the instructor and student.

*Prerequisite(s):* CRC 260IN.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**CRC 296 Clinical Research Independent Study: Clinical Project**

1-6 credit hours, 4-24 periods (4-24 lab)

Students independently continue their development in Clinical Research under the mentorship of a faculty member. Content will be determined by instructor and student.

*Information:* Students must obtain lead faculty approval before enrolling in this course. *Information:* Course content and performance objectives will be kept on file in the campus curriculum coordinator's program file.



## Communication

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### CMN 102 Introduction to Speech Communication

3 credit hours, 3 periods (3 lec.)

Introduction to the function, basic concepts, and skills of oral communication in interpersonal and public address situations. Includes foundations of communication, perception of self and others, intercultural communication, interpersonal communication and relationships, public speaking, and group communication.

### CMN 110 Public Speaking

3 credit hours, 3 periods (3 lec.)

Study and training in public speaking that takes an audience-centered approach. Includes the responsibilities of the public speaker and the listener, managing nervousness and causes of public speaking anxiety, topic selection, audience analysis, organizing the speech, presenting the speech, and types of public speaking.

### CMN 120 Business and Professional Communications

3 credit hours, 3 periods (3 lec.)

Study and training in organizational communication within a multicultural/global environment. Includes communication in a multicultural/global business environment, interpersonal communication skills in a culturally diverse workforce; researching, organizing, and delivering informative, instructional, and persuasive presentations; interviewing techniques, group process in business, and listening techniques.

### CMN 130 Small Group Discussion

3 credit hours, 3 periods (3 lec.)

Study and training in a group communication and decision-making process. Includes the nature and functions of groups, preparation for group work, the group communication process, interpersonal relationships, problem solving and decision-making in small groups, leadership approaches, and designing and delivering small group presentations.

### CMN 140 Interpersonal Communication

3 credit hours, 3 periods (3 lec.)

Introduction to interpersonal communication with an emphasis on the concepts and examples relevant to our daily lives. Includes foundations of interpersonal communication, messages, dynamics, and relationships in context.

## Computer Aided Drafting/Design

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### CAD 101 Computer-Aided Drafting

4 credit hours, 6 periods (3 lec., 3 lab)

Two-dimensional computer-aided drafting (CAD) concepts and techniques. Includes CAD methods, electronic file management, freehand sketching, visualization, dimensioning, and copy production.

*Information:* For individuals with no computer and/or drafting experience.

### CAD 104 Integrated Circuit Layout Fundamentals

4 credit hours, 6 periods (3 lec., 3 lab)

Principles and concepts of integrated circuit layout using Cadence design software. Includes basic electronics, fundamentals of integrated circuits, circuit design, circuit floorplanning, electronic file management, schematic diagram, and physical layout overview.

*Recommendation:* CAD 114 and TEC 100.

### CAD 114 Electronic Manufacturing Processes

2 credit hours, 2 periods (2 lec.)

Principles and concepts of integrated circuit manufacturing processes. Includes integrated circuit device physics, semiconductor fabrication, failure mechanisms, resistors, capacitors, diodes, and metal-oxide semiconductor (MOS) transistors.

### CAD 117 Print Reading with CAD for Manufacturing

4 credit hours, 6 periods (3 lec., 3 lab)

Principles and concepts of print reading, technical freehand sketching, and CAD drawing. Includes common print and manufacturing terms, print fundamentals and standards, and freehand sketching. and CAD applications, and print analysis. Also includes an introduction to SolidWorks solid modeling and detail drawing production.

**CAD 127 Introduction to MicroStation**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to MicroStation basic concepts and techniques. Includes computer aided drafting procedure and methods in the areas of architectural and civil design, electronic file management, software drawing setup, 2D and 3D fundamental elements creation and manipulating elements, annotation, industry standards, scale, dimensioning, hard copy production, and final project.

**CAD 142 Introduction to Parametric Modeling: SolidWorks**

4 credit hours, 6 periods (3 lec., 3 lab)

Beginning level parametric modeling mechanical concepts, techniques, and problems using SolidWorks software. Includes parametric modeling, working drawings and assemblies.

**CAD 151 Computer-Aided Drafting for Construction**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to principles of design. Uses software, such as SketchUp, to explore design at various scales. Includes an overview of modern design, culture creation, human perception, design investigation strategies, and elements and principles of design. Also includes a comprehensive review of 3D modeling methods and presentation techniques.

**CAD 152 Technical Drafting**

4 credit hours, 6 periods (3 lec., 3 lab)

Students will learn basic concepts, techniques, and applications for mechanical drafting. Includes mechanical design fundamentals and standards, advanced Computer-Aided Drafting (CAD) applications, documentation, hardware, tolerancing methods, Geometric Dimensioning and Tolerancing (GD&T), and hard copy techniques and procedures.

*Prerequisite(s): CAD 142*

**CAD 153 Electro-Mechanical Drafting and Design**

4 credit hours, 6 periods (3 lec., 3 lab)

Electronic drafting fundamentals and standards, electronic component and schematic applications, and electronics concepts. Includes Computer-Aided Drafting (CAD) techniques, and file management procedures.

*Prerequisite(s): CAD 101.*

**CAD 154 Integrated Circuit Layout Design I**

4 credit hours, 6 periods (3 lec., 3 lab)

Principles and concepts of mixed signal integrated circuit layout using Cadence design software. Includes design process, circuit floorplanning, analog layout design, digital layout design, ESD (electro-static discharge) design and padding layout, device matching, DRC (design rule check) verification techniques, and LVS (layout versus schematic) verification techniques.

*Prerequisite(s): CAD 104.*

**CAD 155 Residential Computer-Aided Design**

4 credit hours, 6 periods (3 lec., 3 lab)

Residential Computer-Aided Design Beginning level Computer-Aided Design (CAD) of single family detached dwellings. Includes residential CAD skills, site, foundation, floor and roof framing, mechanical, plumbing, and electrical plans, building and wall sections, building elevations, and working drawing coordination.

*Prerequisite(s): CAD 101.*

**CAD 157 Introduction to Site Development Drafting and Design**

4 credit hours, 6 periods (3 lec., 3 lab)

Overview of site planning and design. Includes introduction to site development, applications of CAD drafting, mapping, location and direction, legal descriptions and plot plans, contour lines, details and drawings, and Geographic Information Systems.

*Prerequisite(s): CAD 101.*

**CAD 166 Introduction to Revit**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to Building Information Modeling (BIM) for architectural applications using Revit. Includes how to access tools, build a parametric model, reference levels and views, and produce drawing sheets. Create 3-dimensional elements (families) that contain variable characteristics and embed design intent. Extract, analyze, and modify model information by generating additional section views, rendered perspectives, and schedules.

*Information: For individuals with no BIM experience.*

**CAD 172 Geometric Dimensioning and Tolerancing**

3 credit hours, 3 periods (3 lec.)

Establishing controls on sizes and allowances of mechanical parts. Includes definitions and rules, form tolerances, datums, orientation controls, location controls, runout, and profile.

*Prerequisite(s):* CAD 117 or 142.

*Information:* Prerequisites may be waived if equivalent mechanical drawing experience is documented. See CAD instructor or advisor/counselor.

**CAD 196 Independent Study in Computer-Aided Design: 100 Level**

1-4 credit hours, 3-12 periods (3-12 lab)

Independent work at the 100 level on a special project not included in regular courses. The student is required to obtain a sponsoring CAD instructor and establish objectives, a procedural method, and a method of evaluation.

*Prerequisite(s):* CAD 101.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of eight credits.

**CAD 199 Co-op: Computer-Aided Drafting**

1 credit hour, 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Social and psychological reasons for working, methods of securing employment, preparation of career and job-related objectives and evaluation of student work experience.

*Corequisite(s):* CAD 199WK

*Information:* May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**CAD 199WK Co-op Work: Computer Aided Design**

1-8 credit hours, 5-40 periods (5-40 lab)

A supervised cooperative work program for students in related occupation area. Teacher- coordinators work with students and their supervisors. Variable credit is available by special arrangement.

*Corequisite(s):* CAD 199

*Information:* May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**CAD 203 Advanced Electro-Mechanical Design**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of CAD 153. Includes standards for packaging, fastener library, 3D sheet-metal enclosures, production drawing sheets, materials and fastening systems for enclosures, and hard copy techniques and procedures.

*Prerequisite(s):* CAD 153

**CAD 204 Integrated Circuit Layout Design II**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of CAD 154. Includes intermediate design process, intermediate circuit floorplanning, intermediate analog layout design, intermediate digital layout design, intermediate ESD (electro-static discharge) design and padding layout, intermediate device matching, intermediate DRC (design rule check) verification techniques, and intermediate LVS (layout versus schematic) verification techniques.

*Prerequisite(s):* CAD 154.

**CAD 206 Commercial Design: Revit**

4 credit hours, 6 periods (3 lec., 3 lab)

Computer-Aided Design (CAD) of commercial buildings using Revit. Includes commercial CAD skills, research, design, integrated 3D modeling, rendering, virtual building construction, detailing and documentation.

*Prerequisite(s):* CAD 166.

**CAD 207 Land Development Design: Civil 3D**

4 credit hours, 6 periods (3 lec., 3 lab)

Computer-Aided Design (CAD) specific to sites for construction of buildings, roads, and utilities at the intermediate level using Civil 3D. Includes intermediate civil drafting technology, intermediate surveying, intermediate location and direction, intermediate mapping, intermediate legal descriptions and plot plans, intermediate contour lines, intermediate profiles, intermediate road layout, intermediate earthwork, intermediate Geographic Information Systems (GIS).

*Prerequisite(s):* CAD 157.

**CAD 222 Introduction to Parametric Modeling: Inventor**

4 credit hours, 6 periods (3 lec., 3 lab)

Beginning level parametric modeling mechanical concepts, techniques, and problems using Inventor software. Includes parametric modeling, working drawings, assemblies, animation, and plotting techniques.

**CAD 232 Advanced Parametric Modeling: Inventor**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of CAD 222. Includes advanced parametric modeling mechanical concepts, techniques, and problems using Inventor software. Also includes full assembly set, including detail drawings, sub-assemblies, and revision tracking.

*Prerequisite(s): CAD 172 and 222.*

**CAD 242 Advanced Parametric Modeling: SolidWorks**

4 credit hours, 6 periods (3 lec., 3 lab)

Advanced parametric modeling and complex geometry creation techniques, advanced drawing and detailing, drawing revision, reverse engineering methods, advanced model diagnostics, and model data exchange using SolidWorks. Course includes a final design project.

*Prerequisite(s): CAD 142.*

**CAD 252 Introduction to Parametric Modeling: Creo**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to parametric modeling with Creo. Includes parametric modeling techniques.

**CAD 254 Integrated Circuit Layout Design III**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of CAD 204. Includes advanced design process, advanced circuit floorplanning, advanced analog layout design, advanced digital layout design, advanced ESD (electro-static discharge) design and padding layout, advanced device matching, advanced DRC (design rule check) verification techniques, and advanced LVS (layout versus schematic) verification techniques.

*Prerequisite(s): CAD 204.*

**CAD 256 Advanced Commercial Design: Revit**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of CAD 206 at the advanced level using Revit MEP. Includes advanced level CAD skills, advanced level commercial project programming, advanced level site, foundation, floor, roof framing, mechanical, plumbing, and electrical plans, building and wall sections, building elevations, working drawing coordination, special construction applications, model energy code, and 3D modeling.

*Prerequisite(s): CAD 206.*

**CAD 257 Advanced Land Development Design: Civil 3D**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of CAD 207 at the advanced level using Civil 3D. Includes advanced civil design technology, advanced surveying, advanced location and direction, advanced mapping, advanced legal descriptions and plot plans, advanced contour lines, advanced profiles, advanced road layout, advanced earthwork, and advanced Geographic Information Systems (GIS).

*Prerequisite(s): CAD 207.*

**CAD 265 Design for Sustainability**

4 credit hours, 6 periods (3 lec., 3 lab)

Computer-Aided Design (CAD) applications specific to site and building sustainability. Includes green building fundamentals, Geographic Information Systems (GIS), introduction to 3D modeling for analysis, and detailing systems.

*Prerequisite(s): CAD 155, 157 and 166.*

**CAD 266 Mechanical, Electrical, Plumbing Drafting & Design: Revit MEP**

4 credit hours, 6 periods (3 lec., 3 lab)

3D modeling of commercial mechanical, electrical, and plumbing systems. Includes integration with architectural and structural systems, and production of construction documents.

*Prerequisite(s): CAD 206.*

**CAD 270 Integrated Mechanical/Electro-Mechanical Design**

4 credit hours, 6 periods (3 lec., 3 lab)

Computer-aided design project-based learning with relevant design-rule study in preparation for project design which includes planning for prototype design, hands-on fabrication, assembly, testing, and final report assessment.

*Prerequisite(s): CAD 242.*

**CAD 280 Computer-Aided Design Portfolio**

1 credit hour, 1 periods (1 lec.)

Development of materials for employment. Includes portfolio contents, resume, cover letter, practice interview, portfolio, and presentation.

*Prerequisite(s):* CAD 142 or 204 or 206 or 207 or 222 or 252.

**CAD 282 Advanced Parametric Modeling: Creo**

4 credit hours, 6 periods (3 lec., 3 lab)

Advanced parametric modeling using Creo. Includes modeling advanced- level assemblies, creating detail drawings, creating assembly drawings, and project-based learning. Also includes hard copy techniques and procedures.

**CAD 296 Independent Study in Computer-Aided Design: 200-Level**

1-4 credit hours, 3-12 periods (3-12 lab)

Independent work at the 200-level on a special project not included in regular courses. The student is required to obtain a sponsoring CAD instructor, and establish objectives, a procedural method, and a method of evaluation.

*Prerequisite(s):* CAD 101.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken two times for a maximum of eight credits.

## Computer Information Systems

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**CIS 103 Microsoft Windows Operating System**

4 credit hours, 4 periods (4 lec.)

Professional Administration Fundamental skills necessary to perform day-to-day administration tasks in a Microsoft Windows operating system. Includes windows network administration, windows operating system, user and group accounts, network resource security, print server administration, resource and event audits, and resource monitoring.

*Information:* Preparation for Microsoft certification examination.

**CIS 104 Computer Fundamentals**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to computer information systems. Includes hardware, system software, networks, and threats posed by malicious software and web sites. Also includes the social and economic effects of information, using the Internet to do research, and productivity application software.

*Recommendation:* Completion of CSA 089 or basic computer and keyboard skills, completion of REA 091 or satisfactory score on the reading assessment test before enrolling in this course.

*Information:* Same as CSA 104.

**CIS 119 Network Essentials**

3 credit hours, 3 periods (3 lec.)

Comprehensive introduction to computer networks and data communications. Includes computer networks and services, transmission media and connections, network models, popular protocol suites, other network issues, and network operating systems.

*Recommendation:* Completion of CIS 103 before enrolling in this course.

**CIS 120 Computer Applications for Business**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to computer information systems and applications with an emphasis on Microsoft applications, especially Microsoft Excel. Students will develop an awareness of the critical thinking, quantitative analysis and qualitative assessment skills that serve as the foundation for the effective and ethical use of information as part of an informed business or personal decision.

*Prerequisite(s):* Within the last three years: C or better in MAT 092 or satisfactory score on the mathematics assessment exam.

**CIS 121 Web Publishing**

3 credit hours, 3 periods (3 lec.)

Introduction to website design using the most current versions of Hypertext Markup Language (HTML), JavaScript and Cascading Style Sheet (CSS). Includes PHP programming language, database access, JQuery, asynchronous JavaScript and XML (AJAX), web forms, HTML standards, web design, sessions and cookies.

**CIS 129 Programming and Problem Solving I**

5 credit hours, 5 periods (5 lec.)

Introduction to personal and business computer systems. Includes components of a computer system; advantages and disadvantages of programming languages; traditional languages, native code and object-oriented concepts; source code versus executable code; and data structures and data representation. Also includes language statements; expressions components; control structures; problem-solving techniques; program test data, debugging and termination; and solving simple problems and creating programs using C, Python, or Java.

*Prerequisite(s):* MAT 095 or 097 or concurrent enrollment, through Module 35 in MAT 089A or 089B, or placement into MAT 151.

**CIS 131 Programming and Problem Solving II**

5 credit hours, 5 periods (5 lec.)

Continuation of CIS 129. Includes data structures and data representation, complex problem solving, procedural abstraction, and complex arrays with structured elements. Also includes object oriented programming, exception handling, file input and output, debugging, and testing.

*Prerequisite(s):* CIS 129 with a B or better.

*Information:* Programming assignments will use the C or Java language.

**CIS 132 Introduction to Computer Forensics**

4 credit hours, 4 periods (4 lec.)

Introduction to computer forensics which focuses on methods of detection and prevention of computer crime. Includes multidisciplinary nature of computer forensics; professional opportunities; computer investigations; operating systems introduction; the investigator's office and laboratory; forensic tools; and digital evidence controls. Also includes processing crime and incident scenes; data acquisition; computing forensic analysis; e-mail investigations; recovering image files; investigative report writing; and expert witness testimony.

*Recommendation:* Basic knowledge of computers and how to download and install software is recommended before enrolling in this course.

**CIS 133 Fundamentals of Personal Computer Security**

3 credit hours, 3 periods (3 lec.)

Introduction to Personal Computer (PC) security and how to protect from outside threats. Includes an overview of cyber crime and security issues; networks and the Internet; assessing a personal computer system; denial of service attacks; malware; basics of securing a PC system; and data encryption. Also includes Internet fraud and security; examples of espionage in cyberspace; cyber detective work; and computer security hardware and software.

*Recommendation:* Completion of CIS/CSA 104 and familiarity with the Internet are recommended before enrolling in this course.

**CIS 136 Microcomputer Components**

3 credit hours, 3 periods (3 lec.)

An overview of the primary components of common microcomputer systems. Includes systems components, systems upgrades, printer selection, installation and maintenance, disk drive selection, additional input/output devices, selecting and configuring a system, and other microcomputer topics.

**CIS 137 Introduction to the UNIX Operating System**

3 credit hours, 3 periods (3 lec.)

Principles, tools, and history of the UNIX and Linux operating systems. Includes user utilities and some option switches, file structure and file names, regular expressions and extended regular expressions, shells, text editing, networking, and UNIX and Linux system administration.

*Recommendation:* Completion of CIS/CSA 104 before enrolling in this course.

**CIS 141 Introduction to VB.NET**

4 credit hours, 4 periods (4 lec.)

Introduction to the Visual Basic.NET programming language. Includes Microsoft .NET, .NET framework, common language runtime, getting started with Visual Basic.NET (VB.NET), and object-oriented programming. Also includes user interface programming, VB.NET and the .NET framework, and using ADO.NET in VB.NET

*Prerequisite(s):* CIS 129.



**CIS 142 Introduction to C#**

4 credit hours, 4 periods (4 lec.)

Introduction to Microsoft's .NET Programming Language C. Includes introduction and simple compilation and execution of programs from the Visual Studio IDE; data types and declarations; using methods; creating classes and objects; selection and repetition; and creating and using arrays. Also includes inheritance; exception handling; GUI objects and controls from the Visual Studio IDE; and handling events.

*Prerequisite(s):* CIS 129.

*Recommendation:* Completion of CIS/CSA 104, have prior programming experience, or consent of instructor before enrolling in this course.

**CIS 162 Database Design and Development**

3 credit hours, 3 periods (3 lec.)

Introduction to database concepts and terminology. Includes file systems and databases, the relational database model, entity relationship modeling, normalization, and database design.

**CIS 170 CISCO I: Networking Fundamentals**

5 credit hours, 5 periods (5 lec.)

Introduction to the fundamentals of networking. Includes network concepts; the Open Systems Interconnection (OSI) model; binary numbering system; network architecture; Local Area Network (LAN) design and installation; and Cisco troubleshooting procedures. Also includes preparation for Cisco certification examination.

*Recommendation:* Consult instructor before enrolling in this course.

**CIS 171 CISCO II: Networking Router Technologies**

5 credit hours, 5 periods (5 lec.)

Introduction to the fundamentals of networking router technologies. Includes networking concepts; Open Systems Interconnection (OSI) model; Local Area Network (LAN) technologies; routing protocols; router configuration files; and Cisco troubleshooting procedures. Also includes preparation for the Cisco certification examination.

*Prerequisite(s):* CIS 170.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

**CIS 172 CISCO III: Advanced Routing and Switching**

5 credit hours, 5 periods (5 lec.)

Development of skills to configure advanced routing protocols. Includes Local Area Network (LAN) switching; Virtual LAN (VLAN); LAN design; routing protocols; access lists; and Novell Internetwork Packet Exchange (IPX) protocol. Also includes preparation for the Cisco certification examination.

*Prerequisite(s):* CIS 171.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

**CIS 173 CISCO IV: Project Based Learning**

5 credit hours, 5 periods (5 lec.)

Design and configuration of advanced Wide Area Network (WAN) projects using Cisco IOS command set. Includes WAN design; Point-to-Point protocol (PPP); Integrated Services Digital Network (ISDN); and frame relay. Also includes preparation for Cisco certification examination.

*Prerequisite(s):* CIS 172.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

**CIS 182 Introduction to ANSI SQL**

3 credit hours, 3 periods (3 lec.)

Introduction to the American National Standards Institute (ANSI) Structured Query Language (SQL). Includes relational databases; SQL basics and nomenclature; simple queries, search conditions, and sorting; single table query processing and unions; simple and multi-table joins; summary queries using columns, group queries, and subqueries; and query expressions. Also includes adding, deleting, and modifying data from the database; referential integrity and constraints; creating databases; creating, removing, and modifying tables; and defining constraints.

*Prerequisite(s):* CIS 162.

*Information:* CIS 162 may be waived with consent of instructor.

**CIS 185 Introduction to Python**

4 credit hours, 4 periods (4 lec.)

Introduction to the Python programming language. Includes using a text editor or the built-in Python IDE, IDLE, to develop programs, language syntax, dynamically typed variables, numeric operations, strings, selection control statements, repetition control statements, functions, classes, lists, dictionaries, file I/O, exception handling.

*Prerequisite(s):* CIS 129.

**CIS 199 Introductory Co-op: Computer Information Systems**

1 credit hour, 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Includes communication skills, time and energy management, stress and its management, careers: information and its uses, job market, principles, theories, and practices in the career field, and problems in the work situation.

*Corequisite(s):* CIS 199WK

*Information:* May be taken two times for a maximum of two credit hours.

**CIS 199WK Introductory Co-op Work: Computer Information Systems**

1-8 credit hours, 5-40 periods (5-40 lab)

A supervised cooperative work program for students in related occupation area. Teacher-coordinators work with students and their supervisor. Variable credit is available by special arrangement.

*Corequisite(s):* CIS 199

*Information:* May be taken two times for a maximum of sixteen credit hours.

**CIS 216 Introduction to Wireshark and Network Analysis**

4 credit hours, 4 periods (4 lec.)

Introduction to network analysis with Wireshark. Includes key Wireshark elements and traffic flows, views and settings, capture method and capture filters, display filters on specific traffic, color and export interesting packets, build and interpret tables and graphs, traffic for faster analysis, comments to trace files and packets, and command-line tools.

*Prerequisite(s):* CIS 119 or 170.

*Information:* The prerequisite(s) may be waived with consent of instructor.

**CIS 218 Introduction to Voice over IP (VoIP)**

4 credit hours, 4 periods (4 lec.)

Introduction to the concepts of Voice over Internet Protocol (VoIP) from the history to expected future uses in the workplace and home. Includes an overview, digital voice fundamentals, standards, how an Internet Protocol (IP) phone call works, protocols and structure, relationship to the Open Standards Interconnection (OSI) model, gateways, quality of service, and router concerns.

*Recommendation:* Completion of an introductory course in networking or have networking experience before enrolling in this course.

**CIS 219 Introduction to Virtual Computing**

4 credit hours, 4 periods (4 lec.)

Introduction to the concept of virtualization in computers and virtualization products that permit configuration and management of virtualized environments. Includes installation and configuration of VMware workstation, VMware server, Microsoft virtual server, and Microsoft Hyper-V. Also includes working with virtual networks, implementing disaster recovery and high availability, enhancing virtual security and performance, and working with virtual machine manager.

*Prerequisite(s):* CIS 119 or 170.

*Information:* Consult instructor for alternative prerequisite(s) before enrolling in this course.

**CIS 221 Microsoft Windows Server**

4 credit hours, 4 periods (4 lec.)

Knowledge and skills necessary to install, configure, customize, optimize networks, integrate, and troubleshoot Windows server. Includes overview of Windows networking, managing Windows server, Windows components, and Internetworking and Intranetworking. Also includes active directory services, advanced file systems, Windows security, booting Windows, and Windows application servers.

*Prerequisite(s):* CIS 103.

*Information:* Preparation for Microsoft certification examination.

**CIS 222 Implementing Windows Network Infrastructure**

4 credit hours, 4 periods (4 lec.)

Knowledge and skills to install, configure, maintain, and support a Microsoft Windows network infrastructure. Includes Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Windows Internet Name Service (WINS), traffic security, remote access, network router, remote installation, connectivity with other operating systems, and Web server.

*Prerequisite(s):* CIS 221.

*Information:* Preparation for Microsoft certification examination.

**CIS 223 Implementing Windows Directory Services**

4 credit hours, 4 periods (4 lec.)

Knowledge and skills to install, configure, and administer Microsoft Windows Active Directory directory services. Includes active directory structure, Active Directory directory services, Domain Name System (DNS), group policy implementation, user accounts, software development, group policy security, and administration of active directory objects.

*Prerequisite(s):* CIS 221.

**CIS 225 Linux (UNIX) System and Network Administration**

4 credit hours, 4 periods (4 lec.)

Operations and network administration of the Linux (UNIX) system. Includes background review, basic Linux installation installing software packages, network file services configuration, SAMBA file and print server, Apache web server, and file transfer protocol (FTP).

*Prerequisite(s):* CIS 137.

**CIS 226 Advanced Linux Networking**

4 credit hours, 4 periods (4 lec.)

Advanced concepts in Linux and UNIX networking. Includes background review, basic Linux installation, Network File System (NFS) configuration, Network Information System (NIS) configuration, squid proxy, firewalls, and Lightweight Directory Access Protocol (LDAP).

*Prerequisite(s):* CIS 225.

**CIS 228 Fundamentals of Network Security**

4 credit hours, 4 periods (4 lec.)

Introduction and general overview of security measures for computer networks. Includes authentication methods and techniques; attacks and malicious code; remote access concepts; email and web security; directory and file transfer services; and wireless protocols and security. Also includes hardware devices; topologies and security; methods of intrusion detection; establishing security baselines; introduction to cryptography; disaster recovery policies and procedures; and forensics, risk management, and auditing measures.

*Recommendation:* It is recommended that students complete CIS 119 or obtain consent of instructor prior to enrolling in this course.

*Information:* This course prepares students to take the CompTIA Security Exam.

**CIS 229 Protecting Your PC and Network: CounterMeasures to Network**

4 credit hours, 4 periods (4 lec.)

Management of security for networking security professionals. Includes an overview of risk assessment and risk management principles, the CIS (confidentiality, integrity and availability) Triad, security management and policies, access controls, software development security, business continuity, and disaster recovery planning. Also includes an introduction to cryptology, legal aspects of computer crime, telecommunications, and network security.

*Recommendation:* Completion of CIS 119 or 170, and 228 before enrolling in this course.

*Information:* This course corresponds to the CISSP Certification (Certified Information Security Specialist Profession), but is not intended as a complete preparation for the CISSP Exam.

**CIS 235 Advanced Topics in Linux/Unix Security**

4 credit hours, 4 periods (4 lec.)

Overview for intermediate users of Linux and Linux administrators focusing on security issues. Includes background review, discovering network vulnerabilities, vulnerability mitigation, management awareness, intrusion detection, data gathering, and WiFi.

*Recommendation:* Completion of CIS 225 is recommended before enrolling in this course.

**CIS 241 Advanced Visual Basic.NET Programming**

4 credit hours, 4 periods (4 lec.)

Advanced course in Visual Basic.NET programming with special emphasis on the new NET Framework and how it is used to create distributed applications. Includes review of VB.NET basics, basic Web programming, server-side Web programming with VB.NET, accessing data with VB.NET, and introduction and advanced VB.NET applications.

*Prerequisite(s):* CIS 141.

**CIS 250 Introduction to Assembly Language**

3 credit hours, 3 periods (3 lec.)

Beginning assembly language programming. Includes number systems, machine architecture, program design, the assembler, the stack, array processing and indexing, and sorting. Also includes program debugging and testing, performance issues, program profiling, and programmer productivity issues.

*Prerequisite(s):* CIS 131.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

**CIS 265 The C Programming Language**

4 credit hours, 4 periods (4 lec.)

Principles and syntax of ANSI Standard C and many of the common library functions. Includes writing C programs in portable code to facilitate systems programming concepts.

*Prerequisite(s):* CIS 131.

*Recommendation:* CIS 250.

**CIS 269 Data Structures**

5 credit hours, 5 periods (5 lec.)

Advanced topics in computer science and programming in C> Includes software engineering concepts and theory, memory management, inheritance, overloading, abstract classes, review of C< stacks, queues, recursion, and dynamic abstract data structures. Also includes source control, templates, hash tables, sort and search algorithms, file handling and streams, trees, graphs and networks.

*Prerequisite(s):* CIS 278, or CIS 265 and CIS 279.

**CIS 276 Mobile App Programming: Android I**

4 credit hours, 4 periods (4 lec.)

Topics in computer science and programming in Java specific to Mobile App Programming on Androids. Includes software engineering concepts and theory, Graphical User Interface (GUI) concepts, memory management, inheritance, and exceptions. Also includes eXtensible Markup Language (XML), emulators (Android Virtual Devices), installing, debugging, and an introduction to the Android database system (SQLite).

*Prerequisite(s):* CIS 131.

**CIS 277 Mobile App Programming: Android II**

4 credit hours, 4 periods (4 lec.)

Advanced topics in computer science and programming in Java specific to Mobile App Programming on Androids. Includes advanced software engineering concepts and theory, Event Handling, Graphical User Interface (GUI) concepts, memory management and complexity. Also includes eXtensible Markup Language (XML), emulators (Android Virtual Devices), debugging.

*Information:* CIS 276 or instructor approval is required before enrolling.

**CIS 278 C++ and Object-Oriented Programming**

4 credit hours, 4 periods (4 lec.)

Concepts and implementation of object-oriented programming and design using C++ Includes the language syntax of C++ applications using C++ objects to solve information systems problems, and class libraries created for reuse and inheritance.

*Prerequisite(s):* CIS 131.

*Information:* Prerequisite may be waived with consent of instructor.

**CIS 279 Java Programming**

5 credit hours, 5 periods (5 lec.)

Introduction to the Java programming language. Includes review of fundamentals; objects, classes, and methods; extending classes and overriding methods; text input and output to console; and handling events. Also includes working with GUI components and database access.

*Prerequisite(s):* CIS 131.

**CIS 280 Systems Analysis and Design: Concepts and Tools**

4 credit hours, 4 periods (4 lec.)

Concepts of systems analysis and design for all phases of the systems development life cycle. Includes problem identification, project initiation and planning, analysis, logical design, physical design, implementation and testing, and operations and maintenance. Also includes specific tools used by systems analysts, introduction and use of CASE (computer-aided software engineering) tools, and project management software.

*Prerequisite(s):* CIS 131 or 162.

**CIS 281 Systems Analysis and Design: Applications**

3 credit hours, 3 periods (3 lec.)

Concepts and tools of systems analysis applied to specific projects. Includes performing a project from problem initiation through to implementation using CASE tools, project management software, and appropriate software development tools.

*Prerequisite(s):* CIS 280.

**CIS 283 Advanced Python**

4 credit hours, 4 periods (4 lec.)

Advanced features of the Python programming language. Includes object-oriented programming, database access, GUI development with Tkinter, and web applications.

*Prerequisite(s):* CIS 185.

**CIS 299 Advanced Co-op: Computer Information Systems**

1 credit hour, 1 periods (1 lec.)

See Cooperative Education (CED) section for description.

*Corequisite(s):* CIS 299WK

*Information:* May be taken two times for a maximum of two credit hours.

**CIS 299WK Adv Co-op Work: Comp Info Sys**

1-8 credit hours, 5-40 periods (5-40 lab)

Advanced Co-op Work: Computer Information Systems See Cooperative Education (CED) section for description.

*Corequisite(s):* CIS 299

*Information:* May be taken two times for a maximum of sixteen credit hours.

## Computer Software Applications

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**CSA 089 Beginning Computer Skills**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Beginning approach to operating a computer with a focus on basic computer skills and computer terminology. Includes Windows basics, Internet basics, fundamentals of Pima Community College web site, D2L, and MyPima, email basics, and basic word processing skills.

**CSA 100 Computer Literacy**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Overview of computer applications and functions. Includes components of a computer system, spreadsheet, database, and word processing use within a workplace. Also includes computer networks for communication and information.

*Recommendation:* Completion of CSA 089 or basic computer and keyboard skills, completion of REA 091 or satisfactory score on the reading assessment test before enrolling in this course.

*Information:* CSA 100 meets occupational general education computer and information literacy requirements and is a one credit version of CIS/CSA 104.

**CSA 104 Computer Fundamentals**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to computer information systems. Includes hardware, system software, networks, and threats posed by malicious software and web sites. Also includes the social and economic effects of information, using the Internet to do research, and productivity application software.

*Recommendation:* Completion of CSA 089 or basic computer and keyboard skills, completion of REA 091 or satisfactory score on the reading assessment test before enrolling in this course.

*Information:* Same as CIS 104.

**CSA 110 Spreadsheets: Microsoft Excel**

3 credit hours, 4 periods (2 lec., 2 lab)

Fundamentals of spreadsheet applications using Microsoft Excel. Includes spreadsheet concepts, formulas and functions, formatting worksheets and cells, working with charts and graphics. Also includes Excel lists, managing multiple worksheets and workbooks, collaborating on a workbook, developing an Excel application, data tables and Scenario management, using Solver, importing data, and advanced functions and filtering.

*Prerequisite(s):* MAT 086 with a C or better or MAT 089A through Module 22 or required score on the Mathematics assessment test.

*Recommendation:* Completion of CSA 089 or basic computer skills, completion of WRT 101, REA 091 or required score on the assessment test before enrolling in this course.

*Information:* Prerequisite may be waived with consent of instructor.

**CSA 120 Word Processing: Word**

3 credit hours, 4 periods (2 lec., 2 lab)

Word processing techniques using Microsoft Word create, compare, and manage a range of documents. Includes application of templates, themes, styles, mail merge, web pages, macros, tables, forms, cross references, and indexes.

*Recommendation:* CSA 089 or basic computer skills, completion of REA 091 or satisfactory score on the reading assessment test.

OAP 111 or keyboarding by touching at 30 wpm.

**CSA 130 PowerPoint**

3 credit hours, 4 periods (2 lec., 2 lab)

Fundamentals of Microsoft PowerPoint presentation software. Includes introduction to PowerPoint, beginning a presentation, templates and wizards, color scheme, drawing tools, clip art, presentation in outline view, toolbars, organization charts, graphs, advanced text and graphics, templates and the slide master, slide shows, output and presentation options, animation, video, sound, creating action buttons, connecting to the Internet, and running a slide show.

*Recommendation:* Basic computer skills, completion of REA 091 or equivalent score on the reading assessment.

**CSA 170 Database: Access**

3 credit hours, 4 periods (2 lec., 2 lab)

Techniques for using Microsoft Access. Includes an overview of Microsoft Access, creating tables, working with tables, creating and using select queries, creating and using forms, creating and using reports, creating a report that contains totals, principles of table design and relationships, table design techniques, designing select queries, customizing form designs, working with data access pages, customizing reports, parameter and action queries, query joins and crosstab queries, using advanced form techniques, creating basic macros to automate forms, using macros to provide user interaction and automate tasks, using advanced report techniques, and Access, and the Internet.

*Recommendation:* Completion of CSA 089 or basic computer skills, completion of REA 091 or required score on the Reading assessment test before enrolling in this course.

**CSA 182 Microsoft Windows: Current Version**

3 credit hours, 4 periods (2 lec., 2 lab)

Overview of the Microsoft Windows operating system. Includes introduction to Windows, active desktop, multitasking, Windows help features, Windows Explorer, file management, Windows accessories, exchanging data between programs, print management, control panel, customizing Windows, and networking with Windows.

*Recommendation:* Completion of CSA 089 or basic computer skills, completion of REA 091 or required score on the Reading assessment test before enrolling in this course.

## Crime Scene Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**CSM 100 Intro to Photo Equip & Proc for Crime Scene Investigations**

1 credit hour, 1 periods (1 lec.)

Focus on developing skills in photographing a crime scene. Includes processing black and white films and paper. Also includes tools and equipment, taking basic crime scene photographs, and chemical processes used in processing crime scene photographs.

**CSM 101 Criminalistics**

2 credit hours, 2 periods (2 lec.)

Focuses on awareness and identification of both physical and biological evidence associated with crime scenes, with an emphasis on scientific analysis. Includes discussion on fingerprints, ballistics, DNA and blood evidence, hair and fibers, tool marks, bite marks, glass fragments, handwriting analysis, the scientific technology behind the investigative process, safety issues, and the future of criminalistics.



**CSM 102 Crime Scene Photography**

1 credit hour, 1 periods (1 lec.)

Focuses on the specific skills needed to photograph various types of crime scene situations. Includes 1:1 photography, trace evidence, proper use of photographic equipment for crime scene investigations, and photographing post mortem injuries.

*Prerequisite(s): CSM 100.*

**CSM 103 Latent Processing**

1 credit hour, 1 periods (1 lec.)

Techniques involved in developing latent fingerprints. Includes physical characteristics, types of fingerprints, principles of fingerprinting, fingerprint collection, fingerprint surfaces, and the photography of latent prints.

**CSM 104 Fingerprint Identification**

3 credit hours, 3 periods (3 lec.)

Provides in-depth study and analysis of fingerprints and their comparative value. Includes fingerprinting history, basic pattern types, identification standards and protocols, fingerprint pattern interpretations, and classification systems.

**CSM 105 Blood Pattern Documentation**

.5 credit hours, .5 periods (.5 lec.)

Focuses on awareness of evidentiary value associated with bloodstain interpretation and the importance of proper photographic documentation. Includes discussion on stain and flow patterns, surface considerations, photographing blood patterns, health hazards, and blood detection presumptive tests.

**CSM 106 Ballistics**

.5 credit hours, .5 periods (.5 lec.)

Focuses on firearms, safety and basic evidence collection in crime scene management. Includes firearms and ammunition recognition and identification, ammunition components and homemade bombs. Also includes the scientific technology involved in comparative analysis.

**CSM 107 Courtroom Testimony and Report Writing**

.5 credit hours, .5 periods (.5 lec.)

Focuses on general court practices expected of a crime scene investigator. Includes extensive use of mock/moot trial methods to prepare students for court cases. Also includes developing complete and accurate case reports, tools used by defense attorneys, cross examination, and pre-trial interviews.

*Information: This course emphasizes writing skills.*

## Culinary Arts

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**CUL 100 Culinary Bootcamp**

3 credit hours, 5 periods (1 lec., 4 lab)

Intensive introduction to the fundamentals of cooking that covers kitchen operation and culinary techniques. Includes instruction in kitchen skills; equipment and utensils; use and storage of ingredients; and safety precautions. Also includes demonstrations of various cooking methods, such as dry heat cooking (roasting, grilling, sauteing, pan frying), moist heat cooking (braising, shallow poaching, deep poaching, steaming), baking (techniques and production), and sauce preparation. Also includes instruction in culinary and kitchen terminology.

*Information: Students who enter the AAS program in Culinary Arts may use this course as an elective.*

**CUL 101 Principles of Restaurant Operations**

3 credit hours, 3 periods (3 lec.)

Fundamentals of operating and managing a restaurant. Includes concept development; menu development and food purchases; kitchen equipment; and budgeting and cost control. Also includes restaurant organization, job definitions and staffing, employee training, marketing, sales and promotion, and customer relations. Also includes fundamentals of managing an off-premise catering service.

*Prerequisite(s): CUL 105 and 140.*

**CUL 105 Food Service Nutrition and Sanitation**

3 credit hours, 3 periods (3 lec.)

Basic nutrition concepts with emphasis on the nutritional concerns of restaurants and other types of food service operations. Includes the theory of nutritional label reading; nutritional food values; and the effects food has on the body. Also includes optimal sanitation policies and procedures; maintaining a clean work environment safe from food-borne illnesses; Hazard Analysis Critical Control Points (HACCP); safety and accident prevention; storage, preparation, and cleaning of work surfaces; and legal requirements based on regulations of the local municipality.

*Corequisite(s):* CUL 140

*Information:* Consent of Culinary Arts Department is required before enrolling in this course.

**CUL 110 Food Service Nutrition**

2 credit hours, 2 periods (2 lec.)

Basic nutrition concepts with an emphasis on the nutritional concerns of restaurants and other types of food service operations. Includes health and nutrition; evaluation and use of popular and commercial nutrition information; nutrition elements, such as carbohydrates, lipids, proteins, vitamins, minerals, and water; energy metabolism/balance; and nutrition principles and the life cycle.

**CUL 115 Food Service Sanitation and Safety**

3 credit hours, 3 periods (3 lec.)

Theory and practice of food service safety and sanitation. Includes creating a safe food service environment; food-borne illnesses; Hazard Analysis Critical Control Points (HACCP); sanitation in the purchasing, receiving, and storage of food; and sanitation in the preparation and service of food. Also includes maintaining sanitary facilities and equipment, safety and accident prevention, and legal requirements for food service safety and sanitation. Reviews legal elements of food service sanitation based on requirements and recommendations of Pima County Health Department.

**CUL 130 Hot Foods I**

3 credit hours, 5 periods (1 lec., 4 lab)

Introduction to all facets of hot foods. Includes classic stocks; sauces; soups; liaisons such as roux and starches; cooking techniques; preparation of vegetables; and butchering.

*Prerequisite(s):* CUL 105 and 140.

*Corequisite(s):* CUL 150, CUL 160

**CUL 140 Culinary Principles**

3 credit hours, 3 periods (3 lec.)

Introduction to the culinary profession. Includes professionalism, responsibilities, food service vocabulary, menu elements, principles of cooking, and tools and equipment. Also includes knives and knife skills; food tasting; and identifying and describing stocks and sauces, herbs and spices, chocolate, and vegetables.

*Corequisite(s):* CUL 105

*Information:* Consent of Culinary Arts Department is required before enrolling in this course.

**CUL 145 Meat Fabrication**

3 credit hours, 5 periods (1 lec., 4 lab)

Identification and preparation of meat, including beef, pork, and lamb. Includes identification of primal, subprimal, and retail cuts of meat; fabrication of meat into subprimal (wholesale) and retail cuts; meat preservation, and the seven principles underlying hazard analysis and critical control points (HACCP). Also includes shear force measurements and values, preservation methods, and costing principles.

*Prerequisite(s):* CUL 105 and 140.

*Information:* Consent of Culinary Arts Department is required before enrolling in this course.

**CUL 150 Garde Manger**

3 credit hours, 5 periods (1 lec., 4 lab)

Introduction to the fundamentals of Garde Manger. Includes care of equipment; knife skills; basic sandwiches; herbs and spices; salad greens; dressings (emulsified and non-emulsified); and commercial cooking techniques.

*Prerequisite(s):* CUL 105 and 140.

*Corequisite(s):* CUL 130, CUL 160

**CUL 153 Cakes**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Introduction to the art of cake baking. Includes the ingredients, preparation, and baking of cakes. Also includes icings, decorations, and fillings.

*Prerequisite(s):* CUL 105 and 140.

**CUL 156 Pies**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Introduction to the art of baking pies. Includes a variety of pastry dough, fillings, and other ingredients for creating pies and tarts. Also includes mixing; shaping; baking; and plating and presentation.

*Prerequisite(s): CUL 105 and 140.*

**CUL 160 Bakery and Pastry Production I**

3 credit hours, 5 periods (1 lec., 4 lab)

A comprehensive introduction to preparing an array of baked goods and sweets. Includes yeast breads; quick breads; creams and custards; cakes; filling and frostings; cookies and brownies; elementary plating; and decorating and garnishing techniques. Also includes ingredients; bakery and pastry vocabulary; and safety and sanitation.

*Prerequisite(s): CUL 105 and 140.*

*Corequisite(s): CUL 130, CUL 150*

**CUL 161 Cake Decorating and Candy Making**

3 credit hours, 5 periods (1 lec., 4 lab)

Basic principles and methods of cake decorating and candy making. Includes history of cakes; selection of ingredients; cooking procedures; cake assembly; and presentation. Also includes techniques for creating basic candies, including holiday treats.

*Prerequisite(s): CUL 105 and 140.*

**CUL 162 Art of Chocolate**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Introduction to chocolate in the culinary arts. Includes an introduction to the properties of chocolate and the history of chocolate. Also includes preparation of truffles, dough and batter, and molded and free form chocolate art work.

*Prerequisite(s): CUL 105 and 140.*

**CUL 163 Sauces**

3 credit hours, 5 periods (1 lec., 4 lab)

Concepts, skills, and techniques for sauce and stock creation. Includes preparation of stocks and sauces in a traditional manner and their uses in classic and contemporary kitchens. Also includes identification of and appropriate uses for liaisons.

*Prerequisite(s): CUL 105 and 140.*

**CUL 166 Gluten-Free Baking**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Introduction to the art of gluten-free baking. Includes gluten-free breads, desserts, and pizza. Also includes mixing, shaping, baking, and plating and presentation.

*Prerequisite(s): CUL 105 and 140.*

**CUL 168 Specialty and Hearth Breads**

3 credit hours, 5 periods (1 lec., 4 lab)

Preparation, baking, and evaluation of specialty and hearth breads. Includes the evolution of bread products, bread preparation, and the proper use of flour and yeast. Also includes preparing a variety of classic artisan bread shapes, presenting attractive finished products, and judging the quality of finished breads. Also includes health and sanitation considerations in bread making.

*Prerequisite(s): CUL 105 and 140.*

*Information: Consent of Culinary Arts Department is required before enrolling in this course.*

**CUL 170 Dining Room Operations**

2 credit hours, 2 periods (2 lec.)

Theory and practice of operating a casual dining room. Includes preparation for guest service, proper etiquette for serving guests and clearing tables, wine and beverage sales and service, salesmanship, and customer service.

*Prerequisite(s): CUL 105 and 140.*

**CUL 174 From Garden to Table**

3 credit hours, 5 periods (1 lec., 4 lab)

Introduction to preparing edible plants grown in the Sonoran Desert. Includes the best vegetable and herb selection for year-round harvest, as well as an investigation of optimal soil composition, composting, planting and harvesting techniques, seed saving, and preserving and storage methods. Also includes the nutritional advantage of locally grown plants and how to prepare them for optimal nutritional value. Also includes a survey of best practices for sustainability and recycling in the food service industry.

*Prerequisite(s): CUL 105 and 140.*

**CUL 180 Food in History**

3 credit hours, 3 periods (3 lec.)

History of food, the story of cuisine, and the social history of eating. Includes collecting, gathering and hunting food; stock-breeding and farming; sacramental foods; the economy of food markets; the era of merchants; New World food discoveries; and professional food preparation.

*Prerequisite(s): CUL 105 and 140.*

**CUL 185 Catering Operations**

2 credit hours, 2 periods (2 lec.)

Theory and practice of planning and executing catering functions. Includes booking and planning, banquet room set-up and staffing, banquet service, guest payment and follow up, and specialized functions.

*Prerequisite(s): CUL 105 and 140.*

**CUL 199 Co-op: Culinary Arts**

1 credit hour, 1 periods (1 lec.)

See Cooperative Education section for description.

**CUL 199WK Co-op Work: Culinary Arts**

1-3 credit hours, 5-15 periods (5-15 lab)

A supervised cooperative work program for students in culinary arts. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

*Prerequisite(s): CUL 130.*

*Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**CUL 230 Hot Foods II**

3 credit hours, 5 periods (1 lec., 4 lab)

Continuation of preparation and service of hot food in a contemporary kitchen. Includes cooking techniques; contemporary sauce making; vegetables, grains, and starches; natural liaisons; food plating; and sanitation procedures and techniques.

*Prerequisite(s): CUL 130 and 140.*

*Corequisite(s): CUL 250, CUL 260*

**CUL 251 International Cuisine: World of Flavor**

3 credit hours, 5 periods (1 lec., 4 lab)

Concepts, skills, and techniques used to create global cuisine. Includes ingredients and foods from around the world. Also includes culinary techniques that incorporate culture and food traditions from Latin America, the Mediterranean, Europe, Asia, and the United States.

*Prerequisite(s): CUL 130.*

*Corequisite(s): CUL 230, CUL 260*

**CUL 256 Special Diets**

3 credit hours, 5 periods (1 lec., 4 lab)

Skills and techniques needed to plan and prepare special diets while providing culinary inspiration for healthy, wholesome meals. Includes a wide range of dietary challenges chefs must consider, such as nutrition, taste, and healthy ingredients while preparing gluten free, vegetarian, and vegan meals. Also includes substitutions as alternatives to prohibited ingredients.

*Prerequisite(s): CUL 130.*

**CUL 260 Bakery and Pastry Production II**

3 credit hours, 5 periods (1 lec., 4 lab)

Advanced theory and practice of operating a bakery or pastry shop in a hotel or restaurant kitchen. Includes planning, ordering, and scheduling for bakery production; safety and sanitation; and bakery and pastry vocabulary. Also includes advanced yeast breads; classic French pastries; ice cream and frozen desserts; pastry assembly; pastry garnishes; and complex plated desserts.

*Prerequisite(s): CUL 160.*

*Corequisite(s): CUL 230, CUL 251*

**CUL 261 Advanced Cake Decorating**

3 credit hours, 5 periods (1 lec., 4 lab)

Advanced principles and methods of cake decorating. Includes advanced flower design, gum paste, airbrush, photo transfer, fondant, and chocolate artistry. Also includes advanced techniques for creating cakes for weddings and other special occasions.

*Prerequisite(s): CUL 161.*

## Dance

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### DNC 107 Dance Conditioning

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction to the concepts of dance as a strengthening, stretching, and cardiovascular activity and the awareness of alignment techniques through specific movement experiences and images. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements of dance, and developing the craft.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

### DNC 150 Ballet I

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction to the theory and practice of ballet at the beginning level. Includes terminology, barre, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

### DNC 151 Ballet II

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of DNC 150. Includes ballet techniques at the intermediate level, terminology, barre, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Prerequisite(s):* DNC 150.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

### DNC 152 Ballet III

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of DNC 151. Includes ballet technique at the advanced level, ballet terminology, barre, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Prerequisite(s):* DNC 151.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

### DNC 166 Modern Dance I

2 credit hours, 3 periods (1 lec., 2 lab)

Development of basic skills for dance. Includes modern dance technique at a beginning level, class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

### DNC 167 Modern Dance II

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of DNC 166. Includes development of intermediate skills for modern dance, class protocol, warm-up, floor work, standing and centering floor work, locomotor work, elements, and developing the craft.

*Prerequisite(s):* DNC 166.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

### DNC 168 Modern Dance III

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of DNC 167. Includes development of advanced skills for modern dance, class protocol, warm-up, floor work, locomotor work, elements and developing the craft.

*Prerequisite(s):* DNC 167.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**DNC 180 Choreography**

2 credit hours, 2 periods (2 lec.)

The study of basic dance composition and construction of a phrase, structure, and form. Includes exploring the basic elements of dance, building a movement phrase, choreographic elements, constructing a dance, and analyzing the effectiveness of choreography.

*Prerequisite(s): DNC 150 or 166 or 219.*

*Information: Prerequisite(s) may be waived with consent of instructor. May be taken two times for a maximum of four credit hours. If course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**DNC 200 Dance Appreciation and History**

3 credit hours, 3 periods (3 lec.)

Introduction to the art of dance from its beginning as a religious form to its current place on Broadway and television.

Includes concepts in dance appreciation, themes and purposes of dance, analyzing dance works, styles of dance, roles of and major historical periods of world dance, and movement sessions.

**DNC 219 Jazz Dance I**

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction and development of movement skills necessary to prepare the body as an instrument of expression in jazz dance styles. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**DNC 220 Jazz Dance II**

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of DNC 219. Progressive development of alignment for intermediate level jazz dance. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Prerequisite(s): DNC 219.*

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**DNC 221 Jazz Dance III**

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of DNC 220. Progressive development of alignment for advanced level jazz dance. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

*Prerequisite(s): DNC 220.*

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**DNC 230 Rhythms for Dance**

2 credit hours, 2 periods (2 lec.)

Exploration of the elements of music and music structures and their relationship to dance. Includes musical composition forms, rhythmic dance accompaniment, musical instruments, musical scores, and creation of dance accompaniment.

*Prerequisite(s): DNC 150 or 166 or 219.*

**DNC 269 Dance Ensemble**

3 credit hours, 6 periods (6 lab)

Practical experience in all aspects for taking a dance piece from basic choreography and creating a professional performance. Includes rehearsal/performance process, responsibilities of a performer and/or a choreographer, performance skills, choreographic review; costuming, make-up, sets, and props; publicity, and analysis of the concert.

*Prerequisite(s): DNC 150 or 166 or 219.*

*Information: Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**DNC 280 Business for Dance Careers**

3 credit hours, 3 periods (3 lec.)

Introduction to the various careers available in dance and the appropriate business skills. Includes careers in dance, grant and proposal writing, agency interface, business skills, publicity, and creating a dance business on paper.



**DNC 296 Independent Studies in Dance**

1-3 credit hours, 2-6 periods (2-6 lab)

Composition and/or in-depth independent study in an area of the student's choice with approval by the supervising instructor.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

## Dental Assisting Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**DAE 159 Introduction to Health Care for Dental Assisting**

2 credit hours, 2 periods (2 lec.)

Basic skills essential to working successfully with patients and co-workers in dental offices and clinics, as a member of the dental health team. Includes study skills, psychology, vital signs, communication in the dental environment, job entry skills, research, and oral speech projects.

*Corequisite(s):* DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 160 Orientation to Dental Care**

1 credit hour, 1 periods (1 lec.)

Overview of the field of dental care. Includes the profession of dentistry, areas of service, ethics, and jurisprudence.

*Corequisite(s):* DAE 159, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 161 Biomedical Dental Science**

3 credit hours, 3 periods (3 lec.)

Biosciences as they relate to the oral cavity. Impacts of anatomy, physiology, microbiology, oral pathology, and nutrition on dental health.

*Corequisite(s):* DAE 159, DAE 160, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 162 Dental Assisting I**

2 credit hours, 2 periods (2 lec.)

Principles and techniques of dental assisting. Includes tooth morphology of human dentition, hand and rotary dental instruments, instruments used in various operative procedures, and chairside procedures.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 162LB Dental Assisting I Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of DAE 162. Principles and techniques of dental assisting. Includes tooth morphology of human dentition, hand and rotary dental instruments, instruments used in various operative procedures, and chairside procedures.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 163 Oral Radiography**

2 credit hours, 2 periods (2 lec.)

Introduction to dental roentgenography as a diagnostic aid. Includes radiation protection, dental film, film processing, digital radiography, identification of anatomical landmarks for mounting and interpretation, exposure techniques, and principles of supplementary film.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 163LC Oral Radiography Clinical Lab**

1 credit hour, 3 periods (3 lab)

This is the clinical portion of DAE 163. Introduction to dental roentgenography as a diagnostic aid. Includes radiation protection, dental film, film processing, digital radiography, identification of anatomical landmarks for mounting and interpretation, exposure techniques, and principles of supplementary film.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 164, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 164 Dental Materials**

2 credit hours, 2 periods (2 lec.)

Chemical and physical properties of dental materials used in dental practice. Includes introduction to dental materials, preventive sealants, restorative materials, dental cements, impression materials, gypsum products, and miscellaneous dental materials. Also includes gold, non-precious alloys, and casting of metals.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164LB, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 164LB Dental Materials Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of DAE 164. Chemical and physical properties of dental materials used in dental practice. Includes introduction to dental materials, preventive sealants, restorative materials, dental cements, impression materials, gypsum products, and miscellaneous dental materials. Also includes gold, non-precious alloys, and casting of metals.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 165, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 165 Dental Assisting Procedures I**

1 credit hour, 1 periods (1 lec.)

Techniques and procedures of chairside dental assisting. Includes dental equipment and room design; chairside assisting and team approach; procedures applied in clinical treatment; and computer systems and technology in the dental environment. Also includes the application of student supervised experience in performing dental assisting functions in the clinical setting on patients.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 165LC Dental Assisting Procedures I**

1 credit hour, 4 periods (4 lab)

Dental Assisting Procedures Clinical I This is the clinical portion of DAE 165. Techniques and procedures of chairside dental assisting. Includes dental equipment and room design; chairside assisting and team approach; procedures applied in clinical treatment; and computer systems and technology in the dental environment. Also includes the application of student supervised experience in performing dental assisting functions in the clinical setting on patients.

*Corequisite(s):* DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 166 Dental Assisting II**

3 credit hours, 3 periods (3 lec.)

Principles and techniques of dental assisting. Includes pharmacology and therapeutics; and dental office inventory control. Also includes techniques and procedures for emergency medical/dental care as applied to dental assisting.

*Prerequisite(s):* DAE 159, 160, 161, 162, 162LB, 163, 163LC, 164, 164LB, 165, and 165LB.

*Corequisite(s):* DAE 167, DAE 169LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 167 Dental Assisting III**

3 credit hours, 3 periods (3 lec.)

Principles and techniques of dental practices management and oral health education as applied to dental assisting. Includes preventive dentistry in dental health education, dental office procedures, and summary and evaluation.

*Prerequisite(s):* DAE 159, 160, 161, 162, 162LB, 163, 163LC, 164, 164LB, 165, and 165LB.

*Corequisite(s):* DAE 166, DAE 169LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 169 Dental Assisting Procedures II**

.5 credit hours, .5 periods (.5 lec.)

Application and evaluation of skills acquired in a clinical environment. Includes specialty seminars and guest lecturers; rotations to specialty practices; first and second clinical externship rotation assignments; discussion and analysis of clinical externship; and evaluation process.

*Prerequisite(s):* DAE 159, 160, 161, 162, 162LB, 163, 163LC, 164, 164LB, 165, and 165LC.

*Corequisite(s):* DAE 166, DAE 167, DAE 169LC

*Information:* Consent of program coordinator is required before enrolling in this course.

**DAE 169LC Dental Assisting Procedures Clinical II**

6 credit hours, 24 periods (24 lab)

This is the clinical portion of DAE 169. Application and evaluation of skills acquired in a clinical environment. Includes specialty seminars and guest lecturers; rotations to specialty practices; first and second clinical externship rotation assignments; discussion and analysis of clinical externship; and evaluation process.

*Prerequisite(s):* DAE 159, 160, 161, 162, 162LB, 163, 163LC, 164, 164LB, 165, and 165LB.

*Corequisite(s):* DAE 166, DAE 167, DAE 169

*Information:* Consent of program coordinator is required before enrolling in this course.

## Dental Hygiene

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**DHE 101 Dental Hygiene I**

2 credit hours, 2 periods (2 lec.)

Introduction to the procedures used in the pre-clinical practice of dental hygiene at the beginning level. Includes professionalism and ethics, infection control, body mechanics/ergonomics, evaluation of patient medical and dental history, and assessment data. Also includes instrumentation, laboratory practice of dental hygiene procedures on student partners (e.g. removal of soft deposits, fluorides, various clinical procedures), and awareness of diverse patient populations.

*Prerequisite(s):* BIO 205IN and CSA 101. Hygiene program and obtain consent of the Dental Hygiene

*Corequisite(s):* DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116, DHE 116LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 101LC Dental Hygiene I Clinical**

3 credit hours, 12 periods (12 lab)

This is the clinical lab portion of DHE 101. Introduction to the procedures used in the pre-clinical practice of dental hygiene at the beginning level. Includes professionalism and ethics, infection control, body mechanics/ergonomics, evaluation of patient medical and dental history, and assessment data. Also includes instrumentation, laboratory practice of dental hygiene procedures on student partners (e.g. removal of soft deposits, fluorides, various clinical procedures), and awareness of diverse patient populations.

*Corequisite(s):* DHE 101, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116, DHE 116LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 104 Dental and Oral Morphology**

1 credit hour, 1 periods (1 lec.)

Form and function of primary and permanent dentition. Includes oral cavity proper; form, function and physiology; and tooth identification. Also includes terminology, deciduous dentition morphology, occlusion, tooth anomalies, and root morphology.

*Corequisite(s):* DHE 101, DHE 101LC, DHE 104LB, DHE 107, DHE 112, DHE 116, DHE 116LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 104LB Dental and Oral Morphology Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of DHE 104. Form and function of primary and permanent dentition. Includes oral cavity proper; form, function and physiology; and tooth identification. Also includes terminology, deciduous dentition morphology, occlusion, tooth anomalies, and root morphology.

**Corequisite(s):** DHE 101, DHE 101LC, DHE 104, DHE 107, DHE 112, DHE 116, DHE 116LC

**Information:** Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 107 Oral Embryology and Histology**

2 credit hours, 2 periods (2 lec.)

The development and histology of teeth related to the intra and extra oral tissues of the head as they relate to the practice of dental hygiene. Includes terminology and formation of primary embryonic layers, histology, tooth development, enamel, dentin, and pulp. Also includes cementum, periodontal ligament, bone and alveolar process, mucous membranes, and salivary glands.

**Corequisite(s):** DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 112, DHE 116, DHE 116LC

**Information:** Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 112 Preventive Dentistry**

3 credit hours, 3 periods (3 lec.)

Introduction to dental disease and the promotion of dental health. Includes the role of dental hygienists as prevention specialists, clinical treatment theories, patient care readiness, dental disease, risk assessment, and oral hygiene instruction. Also includes dentin sensitivity, enamel demineralization and remineralization, chemotherapeutics, and tobacco cessation.

**Corequisite(s):** DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 116, DHE 116LC

**Information:** Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 116 Oral Radiography**

2 credit hours, 2 periods (2 lec.)

Principles of dental radiography as a diagnostic aid. Includes radiation production and biology. Also includes clinic experience in exposing, processing, mounting, and interpreting radiographs on mannequins and patients using a variety of radiographic techniques.

**Corequisite(s):** DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116LC

**Information:** Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 116LC Oral Radiography Clinical**

1 credit hour, 4 periods (4 lab)

This is the clinical lab portion of DHE 116. Principles of dental radiography as a diagnostic aid. Includes radiation production and biology. Also includes clinic experience in exposing, processing, mounting, and interpreting radiographs on mannequins and patients using a variety of radiographic techniques.

**Corequisite(s):** DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116

**Information:** Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 119 Periodontology**

2 credit hours, 2 periods (2 lec.)

Survey of periodontology comprised of the etiology, diagnosis, and prognosis of periodontal disease. Includes tissues and microscopic anatomy of the periodontium, historical background, causes, microbiology and classification of periodontal disease, local and systemic contributing factors, clinical assessment, radiographic analysis, and evidence-based periodontal care. Also includes decision making during treatment planning, nonsurgical and patient's role in periodontal therapy, maintenance therapy, research articles and applications, and new dental technology.

**Prerequisite(s):** DHE 101, 101LC, 104, 104LB, 107, 112, 116, and 116LC.

**Corequisite(s):** DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

**Information:** Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 120 Oral Pathology**

2 credit hours, 2 periods (2 lec.)

Overview of oral pathology which is the study of human disease as found within all of the tissues represented in the area of the oral cavity. Includes introduction to pathology, diagnostic methods, normal exam and variants of normal, inflammation and repair, physical/chemical injuries of the oral tissues, and immunity and autoimmune diseases. Also includes infectious diseases, developmental disorders, neoplasia, genetic disorders, and oral manifestations of systemic disease.

*Prerequisite(s):* DHE 101/101LC, 104/104LB, 107, 112 and 116/116LC.

*Corequisite(s):* DHE 119, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 122 Pharmacology**

2 credit hours, 2 periods (2 lec.)

Introduction to the theory of pharmacology as it relates to dentistry. Includes drug action and handling, prescription writing, autonomic drugs, non-opioid analgesics, anti-infective agents, anti-fungal and anti-viral agents, anti-anxiety agents, cardiovascular agents, and anti-convulsant agents. Also includes psychotherapeutic agents, antacids and antihistamines, adreno cortico steroid agents, anti-neoplastic agents, and respiratory and gastrointestinal medications, emergency medications, and drug interactions and drug abuse.

*Prerequisite(s):* DHE 101, 101LC, 104, 104LB, 107, 112, 116, and 116LC.

*Corequisite(s):* DHE 119, DHE 120, DHE 132, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 132 Dental Materials**

2 credit hours, 2 periods (2 lec.)

Chemical and physical properties of dental materials used in dental practice. Includes introduction to dental materials, preventive sealants and restorative materials, dental cements. Also includes impression materials, gypsum products, miscellaneous dental materials; and gold, non-precious alloys, and casting of metals.

*Prerequisite(s):* DHE 101/101LC, 104/104LB, 107, 112, and 116/116LC.

*Corequisite(s):* DHE 119, DHE 120, DHE 122, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 132LB Dental Materials Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of DHE 132. Chemical and physical properties of dental materials used in dental practice. Includes introduction to dental materials, preventive sealants and restorative materials, dental cements. Also includes impression materials, gypsum products, miscellaneous dental materials; and gold, non-previous alloys, and casting of metals.

*Prerequisite(s):* DHE 101/101LC, 104/104LB, 107, 112, and 116/116LC.

*Corequisite(s):* DHE 119, DHE 120, DHE 122, DHE 132, DHE 150, DHE 150LB, DHE 150LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 150 Dental Hygiene II**

2 credit hours, 2 periods (2 lec.)

Continuation of DHE 101/101LC. Application of dental hygiene skills with a variety of clinical patients with simple dental hygiene care plans. Includes instrument review, evidence-based decision making and treatment planning, medical emergency management review, special needs patients, powered instruments, air powder polishing and stain removal, care of dental prostheses, advanced instrumentation and alternate fulcrums, tobacco cessation, subgingival irrigation, and antimicrobials. Also includes dental implant instruments, case studies, table clinics, and laboratory procedures.

*Prerequisite(s):* DHE 101/101LC, 104/104LB, 107, 112 and 116/116LC.

*Corequisite(s):* DHE 119, DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150LB, DHE 150LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 150LB Dental Hygiene II Lab**

.5 credit hours, 1.5 periods (1.5 lab)

This is the lab portion of DHE 150.

*Prerequisite(s):* DHE 101/101LC, 104/104LB, 107, 112 and 116/116LC.

*Corequisite(s):* DHE 119, DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 150LC Dental Hygiene II Clinical**

3 credit hours, 12 periods (12 lab)

This is the clinical lab portion of DHE 150.

*Prerequisite(s):* DHE101/101LC, 104/104LB, 107, 112 and 116/116LC.

*Corequisite(s):* DHE 119, DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LB

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 160LC Clinical Skills Enhancement I**

.25-2 credit hours, 1-8 periods (1-8 lab)

A clinical remediation course designed to support identified first year dental hygiene students who are performing at or below clinic course expectations. Includes education plan, development of individualized clinical remediation plan, and assessment.

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course. May be taken two times for a maximum of four credit hours.

**DHE 196 Independent Studies in Dental Hygiene**

1-4 credit hours, 3-12 periods (3-12 lab)

Independent clinical applications, reading, projects, or lab activities for continuing student development in dental hygiene under faculty guidance.

*Information:* May be taken two times for a maximum of eight credit hours. *Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course. *Information:* May be taken two times for a maximum of eight credit hours.

**DHE 208 Pain and Anxiety Control for Dental Hygiene**

1 credit hour, 1 periods (1 lec.)

Delivery of local anesthetics. Includes introduction to pain and anxiety control; pharmacology, neurophysiology, and local anesthetic agents; nitrous oxide and oxygen analgesia. Also includes health history and complications, treatment, laboratory practices on student partners, emergency procedures, and head and neck anatomy.

*Prerequisite(s):* DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

*Corequisite(s):* DHE 208LC, DHE 209, DHE 212, DHE 250, DHE 250LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 208LC Pain and Anxiety Control for Dental Hygiene Clinical**

1 credit hour, 4 periods (4 lab)

This is the clinical lab portion of DHE 208. Delivery of local anesthetics. Includes introduction to pain and anxiety control; pharmacology, neurophysiology, and local anesthetic agents; nitrous oxide and oxygen analgesia. Also includes health history and complications, treatment, laboratory practices on student partners, emergency procedures, and head and neck anatomy.

*Prerequisite(s):* DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

*Corequisite(s):* DHE 208, DHE 209, DHE 212, DHE 250, DHE 250LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 209 Ethics and Practice Management**

1 credit hour, 1 periods (1 lec.)

Application of ethical theories and ethical principles in the practice of dental hygiene. Includes the business of dentistry, dental hygiene career opportunities, ethics, and jurisprudence.

*Prerequisite(s):* DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

*Corequisite(s):* DHE 208, DHE 208LC, DHE 212, DHE 250, DHE 250LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.



**DHE 212 Nutrition for Oral Health**

1 credit hour, 1 periods (1 lec.)

Introduction of the principles of nutrition including food sources, digestion, absorption, and metabolism of nutrients essential to the oral health of individuals. Includes nutrition as the foundation for general and oral health, nutritional and oral implications of common chronic health conditions, carbohydrates, proteins, lipids, fats, minerals and mineralization, medications and oral health, and nutritional concerns for the dentally compromised patient.

*Prerequisite(s):* DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

*Corequisite(s):* DHE 208, DHE 208LC, DHE 209, DHE 250, DHE 250LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 213 Advanced Periodontal Services**

2 credit hours, 2 periods (2 lec.)

Application of Dental Hygiene skills on advanced periodontal patients. Includes periodontal exam and initial phase, treatment plan, periodontal classifications, plaque control, scaling and root planning indications and limitations, sonic and ultrasonic therapy in periodontal services, hand and powered instrumentation, and implant maintenance. Also includes occlusal evaluation and adjustment, assessment, reevaluation of treatment and maintenance, periodontal healing, antimicrobials and antibiotics, surgical procedures, and nonsurgical periodontal therapy.

*Prerequisite(s):* DHE 208, 208LC, 209, 212, 250, 250LC.

*Corequisite(s):* DHE 213CA, DHE 213CB, DHE 216, DHE 255, DHE 255LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 213CA Advanced Periodontal Services Clinical - A**

1 credit hour, 3 periods (3 lab)

This is the clinical lab part A portion of DHE 213.

*Prerequisite(s):* DHE 208, 208LC, 209, 212, 250 and 250LC.

*Corequisite(s):* DHE 213, DHE 213CB, DHE 216, DHE 255, DHE 255LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 213CB Advanced Periodontal Services Clinical - B**

1 credit hour, 4 periods (4 lab)

This is the clinical lab part B portion of DHE 213.

*Prerequisite(s):* DHE 208, 208LC, 209, 212, 250 and 250LC.

*Corequisite(s):* DHE 213, DHE 213CA, DHE 216, DHE 255, DHE 255LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 216 Community and Dental Health Education**

3 credit hours, 3 periods (3 lec.)

Overview of public dental health education. Includes critiquing dental literature, community dental health planning, basic biostatistics, and epidemiology and research in the dental community. Also includes dental needs and demands, dental care delivery and prevention in the United States.

*Prerequisite(s):* DHE 208, 208LC, 209, 212, 250 and 250LC.

*Corequisite(s):* DHE 213, DHE 213CA, DHE 216CB, DHE 255, DHE 255LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 250 Dental Hygiene III**

3 credit hours, 3 periods (3 lec.)

Continuation of DHE 150/150LB/150LC. Application of dental hygiene skills with a variety of clinical patients with dental hygiene care plans at the intermediate level. Includes dental hygiene theory and care, instrumentation, and care of patients with various physical disabilities.

*Prerequisite(s):* DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

*Corequisite(s):* DHE 208, DHE 208LC, DHE 209, DHE 212, DHE 250LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 250LC Dental Hygiene III Clinical**

4 credit hours, 16 periods (16 lab)

Continuation of DHE 150/150LB/150LC. This is the clinical lab portion of DHE 250. Application of dental hygiene skills with a variety of clinical patients with dental hygiene care plans at the intermediate level. Includes dental hygiene theory and care, instrumentation, and care of patients with various physical disabilities.

*Prerequisite(s):* DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

*Corequisite(s):* DHE 208, DHE 208LC, DHE 209, DHE 212, DHE 250

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 255 Dental Hygiene IV**

1 credit hour, 1 periods (1 lec.)

Continuation of DHE 250/250LC. Includes application of dental hygiene skills with a variety of clinical patients with dental hygiene care plans at the advanced level. Also includes national, regional, and state exam preparation, advanced instrumentation, advanced ultrasonic inserts and techniques, and preparing for entry level employment.

*Prerequisite(s):* DHE 208, 208LC, 209, 212, 250, and 250LC.

*Corequisite(s):* DHE 213, DHE 213CA, DHE 213CB, DHE 216, DHE 255LC

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 255LC Dental Hygiene IV Clinical**

3 credit hours, 12 periods (12 lab)

This is the clinical lab portion of DHE 255.

*Prerequisite(s):* DHE 208, 208LC, 209, 212, 250, and 250LC.

*Corequisite(s):* DHE 213, DHE 213CA, DHE 213CB, DHE 216, DHE 255

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

**DHE 260LC Clinical Skills Enhancement II**

.25-2 credit hours, 1-4 periods (1-4 lab)

A clinical remediation course designed to support identified second year dental hygiene students who are performing at or below clinic course expectations. Includes identification of need through clinical performance scores, development of individualized clinical remediation plan, and assessment.

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course. May be taken two times for a maximum of four credit hours.

**DHE 296 Advanced Independent Study: Dental Hygiene**

1-4 credit hours, 3-12 periods (3-12 lab)

Students independently continue their development in Dental Hygiene under the guidance of a faculty member.

*Information:* Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course. *Information:* May be taken two times for a maximum of eight credit hours.

## Dental Laboratory Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**DLT 101 Dental Morphology**

2 credit hours, 2 periods (2 lec.)

Introduction to human dental morphology through lectures, readings, and sculpting exercises. Includes the dental health care team, anatomical landmarks and terminology, tooth development and landmarks, tooth sculpting, articulators and model mounting, occlusion, and care of laboratory instruments.

*Corequisite(s):* DLT 101LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 101LB Dental Morphology Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of DLT 101. Introduction to human dental morphology through lectures, readings, and sculpting exercises. Includes the dental health care team, anatomical landmarks and terminology, tooth development and landmarks, tooth sculpting, articulators and model mounting, occlusion, and care of laboratory instruments.

*Corequisite(s):* DLT 101

*Information:* Consent of program director is required before enrolling in this course.

**DLT 102 Non-Metallic Dental Materials**

3 credit hours, 3 periods (3 lec.)

Principles of chemistry and physics, identification, selection, and manipulation of non-metallic dental materials. Includes an introduction to dental materials, management of materials, impression material, gypsum materials, dental waxes, refractory materials, and acrylic resin.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Information:* Consent of program director is required before enrolling in this course.

**DLT 103 Complete Dentures**

1 credit hour, 1 periods (1 lec.)

Examination of the relationship between upper and lower dentures as interpreted on a functional articulator. Includes evaluation of preliminary impressions and fabrication of models, custom impression trays, evaluation of final impression and master model, baseplate fabrication, occlusion rims, articulation and mounting of working models, and prosthetic tooth selection. Also includes setting artificial denture teeth, processing the trial denture, finishing complete dentures, fabricating surgical templates, and denture repair and reline.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 103LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 103LB Complete Dentures Lab**

3 credit hours, 9 periods (9 lab)

This is the Lab Portion of DLT 103. Examination of the relationship between upper and lower dentures as interpreted on a functional articulator. Includes evaluation of preliminary impressions and fabrication of models, custom impression trays, evaluation of final impression and master model, baseplate fabrication, occlusion rims, articulation and mounting of working models, and prosthetic tooth selection. Also includes setting artificial denture teeth, processing the trial denture, finishing complete dentures, fabricating surgical templates, and denture repair and reline.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 103

*Information:* Consent of program director is required before enrolling in this course.

**DLT 104 Dental Occlusion**

2 credit hours, 2 periods (2 lec.)

Introduction to the principles of techniques used in the dental laboratory. Includes how to trace and label all aspects of the maxillary and mandibular teeth, control of inlay wax application, restoring occlusal surfaces and clinical crowns to ideal occlusion, functional occlusion on articulated casts, and philosophies of different wax added systems.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 104LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 104LB Dental Occlusion Lab**

2 credit hours, 6 periods (6 lab)

This is the Lab portion of DLT 104. Introduction to the principles of techniques used in the dental laboratory. Includes how to trace and label all aspects of the maxillary and mandibular teeth, control of inlay wax application, restoring occlusal surfaces and clinical crowns to ideal occlusion, functional occlusion on articulated casts, and philosophies of different wax added systems.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 104

*Information:* Consent of program director is required before enrolling in course.

**DLT 105 Partial Denture Construction**

1 credit hour, 1 periods (1 lec.)

Construction of removable partial dentures (RPDs). Includes evaluation and fabrication of preliminary impressions and models, model survey and RPD design, evaluation and fabrication of final impressions and master models, block out procedures, model duplication and refractory casts, creating wax patterns, spruing and investing frameworks, burnout and alloy casts, and recovery of RPD casting. Also includes metal finishing and polishing, occlusion rims, prosthetic tooth selection and tooth setting, processing and finishing the RPD, and soldering of dental alloys.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 105LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 105LB Partial Denture Construction Lab**

3 credit hours, 9 periods (9 lab)

This is the Lab portion of DLT 105. Construction of removable partial dentures (RPDs). Includes evaluation and fabrication of preliminary impressions and models, model survey and RPD design, evaluation and fabrication of final impressions and master models, block out procedures, model duplication and refractory casts, creating wax patterns, spruing and investing frameworks, burnout and alloy casts, and recovery of RPD casting. Also includes metal finishing and polishing, occlusion rims, prosthetic tooth selection and tooth setting, processing and finishing the RPD, and soldering of dental alloys.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 105

*Information:* Consent of program director is required before enrolling in this course.

**DLT 106 Orthodontic Appliances**

2 credit hours, 2 periods (2 lec.)

Construction and theory of simple orthodontic appliances. Includes evaluation of preliminary impressions and fabrication of orthodontic study models, model trimming and evaluation, classification of occlusion and malocclusion types, tooth numbering systems and identification. Also includes wrought wire fabrication, application of wire bending skills, fabrication of removable tooth retaining and moving appliances, and fixed space maintaining appliances.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 106LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 106LB Orthodontic Appliances Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of DLT 106. Construction and theory of simple orthodontic appliances. Includes evaluation of preliminary impressions and fabrication of orthodontic study models, model trimming and evaluation, classification of occlusion and malocclusion types, tooth numbering systems and identification. Also includes, wrought wire fabrication, application of wire bending skills, fabrication of removable tooth retaining and moving appliances, and fixed space maintaining appliances.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 106

*Information:* Consent of program director is required before enrolling in this course.

**DLT 108 Laboratory Management**

3 credit hours, 3 periods (3 lec.)

Examination of the principles of dental laboratory management. Includes blood borne pathogens, infection control guidelines and procedures, Occupational Safety and Health Administration (OSHA) regulations for dental laboratories. Also includes post exposure plan, legal and ethical aspects of the industry, history of dentistry, National Association of Dental Laboratories, and establishing a dental laboratory.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Information:* Consent of program director is required before enrolling in this course.

**DLT 201 Dental Laboratory I**

2 credit hours, 2 periods (2 lec.)

Introduction to the principles and techniques used in the dental laboratory. Includes fabrication and articulation of removable die models, spruing, investing, and casting crown and bridge patterns. Also includes repairs, soldering, and functional occlusion in wax crown, bridge patterns, crown metal castings, and bridge metal castings.

*Prerequisite(s):* DLT 101 and 101LB.

*Corequisite(s):* DLT 201LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 201LB Dental Laboratory I Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of DLT 201. Introduction to the principles and techniques used in the dental laboratory. Includes fabrication and articulation of removable die models, spruing, investing, and casting crown and bridge patterns. Also includes repairs, soldering, and functional occlusion in wax crown, bridge patterns, crown metal castings, and bridge metal castings.

*Prerequisite(s):* DLT 101 and 101LB.

*Corequisite(s):* DLT 201

*Information:* Consent of program director is required before enrolling in this course.

**DLT 202 Dental Metallurgy**

3 credit hours, 3 periods (3 lec.)

Examination of metals currently used by the dental technician. Includes introduction to dental alloys (e.g. physical and chemical properties); weights, measures, and calculations; metal sensitivities and allergies. Also includes alloy processing; equipment calibration; metal treatment and torch techniques; electro-polisher and electrolyte solution operation; and safety procedures.

*Prerequisite(s):* DLT 101 and 101LB.

*Information:* Consent of program director is required before enrolling in this course.

**DLT 203 Fixed Bridgework**

1 credit hour, 1 periods (1 lec.)

Construction of fixed single tooth restorations and bridgework. Includes prescriptions and work authorizations, fixed restoration design, and preparation requirements. Also includes waxing, seating, finishing, evaluation of fixed single tooth restorations, and bridgework castings.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 203LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 203LB Fixed Bridgework Lab**

3 credit hours, 9 periods (9 lab)

This is the Lab portion of DLT 203. Construction of fixed single tooth restorations and bridgework. Includes prescriptions and work authorizations, fixed restoration design, and preparation requirements. Also includes waxing, seating, finishing, evaluation of fixed single tooth restorations, and bridgework castings.

*Prerequisite(s):* DLT 101 and 101LB, or concurrent enrollment.

*Corequisite(s):* DLT 203

*Information:* Consent of program director is required before enrolling in this course.

**DLT 204 Dental Laboratory II**

2 credit hours, 2 periods (2 lec.)

Continuation of DLT 201. Principles and techniques used in the dental laboratory. Includes physics of light, color theory, edodontically treated teeth, reduction copings, attachments, application of dental attachments, swing lock retention for removable partial dentures, and semi precision attachment in a bridge.

*Prerequisite(s):* DLT 108, 201, 201LB, 202, 203, and 203LB.

*Corequisite(s):* DLT 204LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 204LB Dental Laboratory II Lab**

1 credit hour, 3 periods (3 lab)

Continuation of DLT 201, this is the Lab portion of DLT 204. Principles and techniques used in the dental laboratory. Includes physics of light, color theory, endodontically treated teeth, reduction copings, attachments, application of dental attachments, swing lock retention for removable partial dentures, and semi-precision attachment in a bridge.

*Prerequisite(s):* DLT 108, 201, 201LB, 202, 203, and 203LB.

*Corequisite(s):* DLT 204

*Information:* Consent of program director is required before enrolling in this course.

**DLT 206 Dental Ceramics**

2 credit hours, 2 periods (2 lec.)

Introduction to porcelain fused to metal techniques. Includes prescriptions and work authorizations; porcelain fused to metal restoration designs and preparation requirements; design, wax-up, and finishing of porcelain fused to metal substructure; metal conditioning; and building ceramic restorations. Also includes porcelain furnace operation, contouring fired porcelain, finishing, and soldering.

*Prerequisite(s):* DLT 108, 202, 203, and 203LB.

*Corequisite(s):* DLT 206LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 206LB Dental Ceramics Lab**

2 credit hours, 6 periods (6 lab)

This is the Lab portion of DLT 206. Introduction to porcelain fused to metal techniques. Includes prescriptions and work authorizations; porcelain fused to metal restoration designs and preparation requirements; design, wax-up, and finishing of porcelain fused to metal substructure; metal conditioning; and building ceramic restorations. Also includes porcelain furnace operation, contouring fired porcelain, finishing, and soldering.

*Prerequisite(s):* DLT 104, 104LB, 108, 202, 203, and 203LB.

*Corequisite(s):* DLT 206

*Information:* Consent of program director is required before enrolling in this course.

**DLT 207 Advanced Dental Laboratory Technology**

2 credit hours, 2 periods (2 lec.)

Application of dental laboratory techniques at the advanced level. Includes full dentures, partial dentures, crown and bridge, dental ceramics, and orthodontics.

*Prerequisite(s):* DLT 104, 104LB, 108, 202, 203, and 203LB.

*Corequisite(s):* DLT 207LB

*Information:* Consent of program director is required before enrolling in this course.

**DLT 207LB Advanced Dental Laboratory Technology Lab**

3 credit hours, 9 periods (9 lab)

This is the Lab portion of DLT 207. Application of dental laboratory techniques at the advanced level. Includes full dentures, partial dentures, crown and bridge, dental ceramics, and orthodontics.

*Prerequisite(s):* DLT 104, 104LB, 108, 202, 203, and 203LB.

*Corequisite(s):* DLT 207

*Information:* Consent of program director is required before enrolling in this course.

## Digital Arts

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**DAR 101 Color Rendering and Theory**

4 credit hours, 5 periods (3 lec., 2 lab)

Basic color theory and rendering principles as applied to digital and graphic design. Includes color types, definition and use of color schemes, rendering concepts and techniques, media, technique, composition, designing characters for animation, three-dimensional techniques and construction, and professional environment.

**DAR 102 Fundamentals of Digital Design**

4 credit hours, 5 periods (3 lec., 2 lab)

Overview of the theory, survey, and practice of digital arts design. Includes survey of industry careers, skills and processes needed for working with clients, marketing strategies for products and services, and portfolio requirements for local, national, and global markets.

**DAR 103 Introduction to Digital Video and Film Arts**

3 credit hours, 3 periods (3 lec.)

Overview of the theory and practice of the digital video and film arts industry. Includes various electronic media delivery systems, digital image, and target market and advertising.



**DAR 111 Typography**

4 credit hours, 5 periods (3 lec., 2 lab)

Letter forms and use in visual communications. Includes type rendering, letter spacing, type and headline groupings, type relationships, type images, and type applications.

*Prerequisite(s):* DAR 102 or 103.

**DAR 112 Graphic Design**

4 credit hours, 5 periods (3 lec., 2 lab)

Basic principles of color and design as applied to the graphics industry. Includes creating focal points, unity, texture, space relationships, color control, color harmonies, and psychology of color.

**DAR 115 Digital Video Editing**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to non-linear editing on the computer. Includes historical development of editing, digital video and audio formats, techniques and theory of storytelling in editing, storytelling in various types, and organization for the edit.

*Prerequisite(s):* DAR 103 or concurrent enrollment.

**DAR 120 Applied Computer Graphics**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to current computer graphics software. Includes current software, desktop publishing documents, postscript illustration documents, painting or photo editing documents, file creation using computer software applications, computer graphics hardware, and professional environment.

**DAR 122 DeskTop Graphics: Adobe Illustrator**

4 credit hours, 5 periods (3 lec., 2 lab)

Computer generated graphics and illustrations. Includes current Adobe Illustrator software, computer graphics hardware, documents, and professional environment.

*Prerequisite(s):* DAR 120.

**DAR 124 Writing for Film and Television**

3 credit hours, 3 periods (3 lec.)

Examining dramatic writing in visual mediums and creating the story for the screen. Includes story origins and formats, story structure, elements of story, preproduction, writing for alternative media, working in the film and television industry, writing processes, and criticism.

**DAR 125 Digital Cinematography I**

4 credit hours, 6 periods (2 lec., 4 lab)

Principles and techniques of digital cinematography production. Includes digital video camera, camera and shooting competencies, lighting and composition, and working as a team.

*Prerequisite(s):* DAR 103 and 115.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 128 Digital Photography I**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to digital photography emphasizing the technical and aesthetic issues and how these qualities form image content. Includes Adobe Photoshop basics, history of still photography, applications of digital cameras, aspects of the digital medium, camera and computer equipment requirements, digital still camera, memory and file formats, digital still camera lenses, and proper exposure. Also includes light, color, and temperature; depth of field, shutter speed effects, proper use of digital photography, lighting for digital stills, elements of composition, photographic rendering and reality, outputting and publishing, portfolio preparation, and career options in digital photography.

*Recommendation:* Adobe Photoshop experience is highly recommended before enrolling in this course.

*Information:* Same as ART 128. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment, and studio will be provided for specific assignments. There will be additional supply costs beyond course fees.

**DAR 140 Digital Arts IllustrationStudio:Illustration Technique&Media**

4 credit hours, 5 periods (3 lec., 2 lab)

Basic principles, techniques and media applied to digital and traditional illustration styles, subject matter used in print illustration. Includes subject, media, technique, composition, and professional environment.

*Prerequisite(s):* DAR 101.

**DAR 145 Digital Arts Illustration Studio:Char Dev for Animation&Prnt**

4 credit hours, 5 periods (3 lec., 2 lab)

Principles and techniques applied to character development used for animation, products, and print material. Includes drawing in a loose manner, designing characters, materials, techniques and construction, various applications, and professional environment.

*Prerequisite(s):* DAR 101.

**DAR 146 Lighting for Photography I**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to creative professional lighting concepts and techniques for commercial and fine art photography. Includes lighting and studio equipment, light qualities, lighting for form, lighting for surface qualities, still-life photography, portrait photography, image composition, critical analysis, and portfolio.

*Prerequisite(s):* ART/DAR 128.

*Information:* Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments. There may be additional supply costs in addition to course fees. Same as ART 146.

**DAR 173 History of American Cinema**

3 credit hours, 3 periods (3 lec.)

American cinematic film making as an art form, economic force, and system of representation and communication. Includes history of American cinema, development of the significant films and directors, film studios, and image, cinema genres, history of narrative film and film sounds, alternative American films, analysis and criticism, and American cinema team.

**DAR 175 The Art of Digital Cinematography**

3 credit hours, 4 periods (2 lec., 2 lab)

Basic techniques of the art of digital cinematography. Includes storyboarding and vision of the story, camera considerations, light and image in production, post-production techniques, different genres, and the production team.

*Prerequisite(s):* DAR 103 and 115 or concurrent enrollment, in both.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 176 Digital Animation**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to digital animation techniques. Includes history of art animation, procedures in animated films, producing animation, character design and movements, technical information, storyboarding, animation techniques, basic principles of animation, and creation of a digital animation project.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 196 Digital Arts Independent Projects: Media Projects**

1-4 credit hours, 3-12 periods (3-12 lab)

Students independently continue their development in media communications with the help of a faculty member.

*Prerequisite(s):* DAR 103, 124, 125, 175.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times of a maximum of twelve credit hours.

**DAR 205 Lighting for Film and Video**

4 credit hours, 6 periods (2 lec., 4 lab)

Creative lighting techniques, practices, and use of equipment. Includes the visible spectrum, film and exposure, using electricity, video and the electronic medium, controlling color temperature, light quality, and measuring light intensity. Also includes manipulating light, light concepts in practice, and light in the studio and on location.

*Prerequisite(s):* DAR 125 or 175.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 210 Digital Arts Design Studio: Advertising Design**

4 credit hours, 5 periods (3 lec., 2 lab)

Principles and techniques as applied to advertising design. Includes ad design, billboard design, logo design, poster design, brochure design, package design, and other mediums.

*Prerequisite(s):* DAR 112.

**DAR 211 Digital Arts Design Studio: Product Design**

4 credit hours, 5 periods (3 lec., 2 lab)

Principles and techniques as applied to product design. Includes package design, card design, textile design, compact disc (CD) design, digital video disc (DVD) design, game design, and sign design.

*Prerequisite(s):* DAR 112.

**DAR 212 Digital Arts Design Studio: Package Design**

4 credit hours, 5 periods (3 lec., 2 lab)

Procedures and techniques for creating wrapper and container comprehensives. Includes layout, packaging, construction techniques, mock-ups, and the professional environment.

*Prerequisite(s):* DAR 112.

**DAR 217 Post Production for Film**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to film post production video and audio techniques and aesthetics of film editing. Includes history of the art of film editing, preparing for the edit, tools of the editor, cutting techniques, and preparing for sound. Also includes sound, dialogue, looping, and music editing; the mix; and the answer print.

*Prerequisite(s):* DAR 125.

**DAR 221 Photo Image Editing: Adobe PhotoShop**

4 credit hours, 5 periods (3 lec., 2 lab)

Computer retouching and manipulation of photos and illustrations. Includes current Adobe PhotoShop software, edit and retouch, hardware, and professional environment.

*Prerequisite(s):* DAR 120.

*Information:* Experience in computer graphics may be substituted for prerequisites. See a Digital Arts faculty member for information.

**DAR 224 Advanced Screenwriting**

3 credit hours, 3 periods (3 lec.)

In-depth examination of writing in visual mediums. Includes writing workshops, planning feature length screenplays, alternative writing processes, contemporary scripts and screenwriters, mythic archetypes, creative deconstruction, finding representation, and current trends in the screenwriting industry.

*Prerequisite(s):* DAR 103 and 124.

*Information:* Experience in computer graphics may be substituted for some prerequisites. See a Digital Arts faculty member for information.

**DAR 225 Digital Cinematography II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of DAR 125. Production of digital video projects. Includes analyzing the needs in a post-production plan, story and visual elements, production equipment needs, lighting the digital video production, in camera and post production special effects, editing and the visual storyline, and building a demo reel.

*Prerequisite(s):* DAR 124 and 125.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 226 DeskTop Publishing for Digital Arts: Adobe InDesign**

4 credit hours, 5 periods (3 lec., 2 lab)

Design and creation of publications on a personal computer system. Includes current Adobe InDesign software documents, computer graphics hardware, and professional environment.

*Prerequisite(s):* DAR 120.

*Information:* Prerequisites may be waived with experience in computer graphics. See a Digital Arts faculty member for information.

**DAR 230 Production Techniques for Print**

4 credit hours, 5 periods (3 lec., 2 lab)

Preparation of artwork for printing. Includes crop marks, typesetting to specifications, typesetting to match a layout line breaks/spelling, spot colors, duotones, bleeds/reversed type, two sided documents, dummy documents, line art/photos, output, newspaper and magazine ads, logo specifications, paper stock, outline photos, CMYK process colors, multiple page booklets, trapping, and professional work environment.

*Prerequisite(s):* DAR 122, 221 and 226 or concurrent enrollment.

**DAR 232 Digital Photography II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 128. Includes intermediate digital cameras with manual functions, intermediate digital darkroom and digital output, quality of light, intermediate image composition, multiple images, intermediate portfolio development, and critical analysis. Also includes the intermediate use of state-of-the-art professional quality computers and image processing software, professional digital cameras, printers, and a lighting studio with professional lighting equipment.

*Prerequisite(s):* ART/DAR 128.

*Recommendation:* Completion of DAR 221 before enrolling in this course.

*Information:* Same as ART 232. The prerequisite may be waived with consent of the instructor. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment and studio will be provided for specific assignments. There will be additional supply costs beyond course fees.

**DAR 240 Digital Arts Illustration Studio: Book Illustration**

4 credit hours, 5 periods (3 lec., 2 lab)

Principles and techniques applied to various book, graphic novel and comic magazine illustration. Includes advanced subjects, media, techniques, various applications, and professional environment.

*Prerequisite(s):* DAR 101.

**DAR 246 Lighting for Photography II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 146. Includes lighting and equipment for studio and location, advanced lighting qualities and techniques, photographing with mixed light sources, lighting for mood and environment, set design and construction, photographing individuals and groups of people, photographing on location, photographing for montage images, advanced image composition, critical analysis, business practices, and portfolios.

*Prerequisite(s):* ART/DAR 146.

*Information:* Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments. There may be additional supply costs in addition to course fees. Same as ART 246.

**DAR 250 Computer 2D Animation: Adobe After Effects**

4 credit hours, 5 periods (3 lec., 2 lab)

Two dimensional animation on the computer. Includes storyboards, techniques and terms, logo animation, character animation, metamorphic animation, and production techniques.

*Recommendation:* Completion of DAR 221 before enrolling in this course.

**DAR 251 Computer 3D Animation: Maya**

4 credit hours, 5 periods (3 lec., 2 lab)

Beginning modeling, rendering, and animation on the computer using Maya, may include other current industry software. Includes menus, image creation, color, printing, precision model making, object creation and design, and compatibility.

*Recommendation:* Completion of DAR 221 or 250 before enrolling in this course.

**DAR 252 Interactive Design I**

4 credit hours, 5 periods (3 lec., 2 lab)

Interactive Design I Introduction to the theory, survey, and practice of designing and developing beginning interactive applications. Includes design for current formats, design and development planning, core concepts of Animate software, HyperText Markup Language (HTML) 5 concepts, and application development. Also includes adding media to projects, core visual aesthetics, business considerations, and publishing.

*Prerequisite(s):* DAR 120.

*Information:* Prerequisites may be waived with experience in computer graphics. See a Digital Arts faculty member for information.

**DAR 254 Interactive Design II**

4 credit hours, 5 periods (3 lec., 2 lab)

Continuation of DAR 252. Introduction to the theory, survey, and practice of designing and developing advanced interactive applications. Includes current multimedia formats and funding options, storyboarding interactive projects, advanced online design concepts of Animate, HyperText Markup Language (HTML) 5 concepts, and advanced application development. Also includes simple graphics and animations, advanced visual aesthetics, business and legal considerations; and publishing, marketing, and distribution.

*Prerequisite(s):* DAR 252.

**DAR 256 Web Design I**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to the theory, survey, and practice of designing and developing beginning website and application interfaces. Includes building websites, creating a static website with Dreamweaver, creating a dynamic website with WordPress, HyperText Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript, web applications, web content, uploading websites, and web standards.

*Prerequisite(s):* DAR 122 and 221.

**DAR 257 Advanced Web Design**

4 credit hours, 5 periods (3 lec., 2 lab)

Theory, survey, and practice of designing and developing advanced website and application interfaces. Includes using basic Hypertext Preprocessor (PHP), designing and adding content to a MySQL database, creating a WordPress theme; using advanced HyperText Markup Language (HTML) Cascading Style Sheet (CSS), and JavaScript code; formatting multimedia content, and best practices in web design.

*Prerequisite(s):* DAR 221 and 256.

**DAR 258 Advanced Computer 3D Animation: Maya**

4 credit hours, 5 periods (3 lec., 2 lab)

Advanced modeling, rendering, and animation utilizing high end character 3D software. Includes a review of 3D basics, advanced modeling, animation, and surfacing techniques, advanced lighting and camera effects, and kinematics and contortions.

*Prerequisite(s):* DAR 251.

**DAR 275 Basic Audio Production**

4 credit hours, 6 periods (2 lec., 4 lab)

Fundamental tools, techniques, and procedures for multi-track recording. Includes elements of sound, sound studios, consoles, digital recorders, microphone application, and technical planning and sound design. Also includes on location versus studio recording, mixing and re-recording, and editing.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 285 Documentary Television and Film**

4 credit hours, 6 periods (2 lec., 4 lab)

Fundamentals of nonfiction film/video production. Includes history of documentary production, European vs. American documentary makers, operating the camera, film and video techniques, television themes, production of a television documentary, and location problems.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 286 Digital Cinematography Capstone**

4 credit hours, 6 periods (2 lec., 4 lab)

Tools, techniques, and procedures involved in professional film production. Includes pre-planning a digital video production, script breakdown, pre-production and post-production, budgeting, distribution, promotion, and developing a prospectus.

*Prerequisite(s):* DAR 115, 124, and 175.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

**DAR 288 Digital Arts Business and Portfolio Capstone**

2 credit hours, 3 periods (1 lec., 2 lab)

Production of professional quality digital arts portfolio with a focus on extended, in-depth study of the digital art industry and work environment. Includes professional design relationships, current digital arts tools and processes, interviews, and presentation of portfolios.

*Prerequisite(s):* DAR 111, 112, 122, 221, and 226.

**DAR 290E2 Digital Video and Film Arts Internship**

3 credit hours, 15 periods (15 lab)

Work environment in digital video and film arts. Includes interpersonal communication, professional development, employment strategies, and field experience.

*Prerequisite(s):* DAR 103, 124, 125, and 175.

*Information:* Consent of the video and film arts instructor and 12 credit hours of DAR course work is required to be placed in an internship position.

**DAR 290E3 Internship in Digital Arts/Graphics**

3 credit hours, 15 periods (15 lab)

Work environment in digital arts/graphics field. Includes interpersonal communication, professional development, employment strategies, and field experience.

*Prerequisite(s):* DAR 101, 111, and 112.

*Information:* Consent of the digital arts/graphics instructor or department chair and 12 credit hours of DAR coursework is required to be placed in an internship position.

**DAR 296 Digital Arts Independent Projects**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes defining a project, tools and medium, conceptualize and execute a project, professional environment, and complete and critique the project.

*Information:* May be taken four times for a maximum of sixteen credit hours. Consent of instructor is required before enrolling in this course.

**DAR 296I1 Digital Arts Independent Projects: Design**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation.

*Information:* May be taken four times for a maximum of sixteen credit hours. *Information:* Consent of instructor is required before enrolling in this course.

**DAR 296I2 Digital Arts Independent Projects: Illustration**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation.

*Information:* May be taken four times for a maximum of sixteen credit hours. *Information:* Consent of instructor is required before enrolling in this course.

**DAR 296I3 Digital Arts Independent Projects: Desktop Publishing**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures, and a method of evaluation.

*Information:* May be taken four times for a maximum of sixteen credit hours. *Information:* Consent of instructor is required before enrolling in this course.

**DAR 296I4 Digital Arts Independent Projects: Interactive Design**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures, and a method of evaluation.

*Information:* May be taken four times for a maximum of sixteen credit hours. *Information:* Consent of instructor is required before enrolling in this course.

**DAR 296I8 Digital Art Independent Proj: Adv Digital Video/Audio/Film**

1-4 credit hours, 3-12 periods (3-12 lab)

Students independently continue their development in digital video, audio, and film media with the help of a faculty member.

*Information:* May be taken three times for a maximum of twelve credit hours. *Information:* Completion of twelve credit hours of DAR courses, DAR 196, and consent of instructor are required before enrolling in this course.

**DAR 297 Digital Arts Seminar**

.25-4 credit hours, .25-4 periods (.25-4 lec.)

Digital Arts job-related training. Includes presentations and development of skills in a given area. May include special topics of timely or limited interest. Course content may be delivered all, or in part, via the web.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of twelve credit hours.



## Direct Care Professional

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### DCP 101 Direct Care Professional: Principles of Care Giving

2.25 credit hours, 2.25 periods (2.25 lec.)

Addresses principles and application of care giving and personal care in the various home and community based settings. Includes examination of legal and ethical issues, communication, activities, nutrition and food preparation, housekeeping, infection control, safety, and time and stress management for the Direct Care Professional (DCP).

### DCP 102 Direct Care Professional: Aging/Physical Disabilities

2 credit hours, 2 periods (2 lec.)

Presents principles and applications of provision of care in the home environment for older adults and persons with disabilities. Addresses overview of services and continuum of care; aspects of independent living; and roles and responsibilities of Direct Care Professionals (DCPs). Also includes legal and ethical issues, vulnerable adult abuse, reporting requirements, care plans, biological aspects of aging, physical disabilities and chronic conditions, psychological and cognitive conditions, and implications for DCPs. An overview of dementia-specific care is incorporated.

*Prerequisite(s):* DCP 101.

### DCP 103 Direct Care Professional: Alzheimer's/Forms of Dementia

2 credit hours, 2 periods (2 lec.)

Presents principles and applications of provision of care in the home environment for persons with Alzheimer and related forms of dementia. Addresses an overview of services and continuum of care; aspects of independent living; and roles and responsibilities of Direct Care Professionals (DCPs). Also includes legal and ethical issues, vulnerable adult abuse, reporting requirements, and care plans. Emphasis on aspects of Alzheimer's as related to physical disabilities and chronic conditions, psychological and cognitive conditions and implications for DCPs.

*Prerequisite(s):* DCP 101.

### DCP 104 Direct Care Professional: Developmental Disabilities

2 credit hours, 2 periods (2 lec.)

Addresses a foundational knowledge for the provision and application of quality care for people with developmental disabilities by Direct Care Professionals (DCPs) or family caregivers. Includes the examination and application of philosophical, social, medical, physical, legal, and ethical issues faced by people with disabilities.

*Prerequisite(s):* DCP 101.

### DCP 190 Direct Care Professional Internship

2 credit hours, 10 periods (10 lab)

Provides students with hands on-experiences at a direct care agency. Includes an orientation to working in a direct care agency; working with a developmentally/physically disabled population and the aging; professionalism in the direct care profession, and application of the principles of care giving through hands-on experience in the field. Also includes program administration; management, supervision and other oversight positions; office practices and computer applications for direct care; and funding sources for human service agencies and organizations.

*Prerequisite(s):* DCP 101, 102, and either 103 or 104.

*Information:* Included in the 160 internship hours are 24 hours of classroom instruction; 1 credit hour is equal to 80 hours of contact time. *Information:* Course is optional for program.

## Early Childhood Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### ECE 100 Introduction to the Child Care Profession

2 credit hours, 2 periods (2 lec.)

Comprehensive employment preparation for clients referred by the Department of Economic Security (DES) and other individuals interested in the field of child care. Includes child development; positive discipline and guidance; language, literacy, math, and science development; and learning environments. Also includes licensing, health and safety, nutrition, children with disabilities, and handling child abuse.

**ECE 107 Human Development and Relations**

3 credit hours, 3 periods (3 lec.)

Analysis of the elements that affect growth and development throughout the life span. Includes theories and global perspectives, prenatal development, oral language development, development within domains, parenting styles, death and dying, local and community influences, and theories in action.

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

**ECE 108 Literature/Social Studies for Children**

3 credit hours, 3 periods (3 lec.)

Survey of principles, materials, and techniques for the selection and evaluation of children's literature and social studies materials. Includes history of children's literature, resources, evaluation, developing a professional portfolio, use of appropriate materials, alignment with national social studies standards, presentation techniques, and developmentally appropriate practices.

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

**ECE 115 Supervision and Administration of Early Childhood Programs**

3 credit hours, 3 periods (3 lec.)

Analysis of elements for planning, implementing, maintaining, and evaluating early childhood education programs. Includes program assessment, philosophy and mission statements, basic business operations, ethics, engaging stakeholders, regulating agencies, and child advocacy.

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

**ECE 117 Child Growth and Development**

3 credit hours, 3 periods (3 lec.)

Analysis of the elements which affect growth and development pre-birth to age eight. Includes developmental theorists, roles of genetics, health and social influences, public policy issues, and domains of development.

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

**ECE 118 Foundations of Early Childhood Education**

3 credit hours, 3 periods (3 lec.)

A survey of the historical and philosophical foundations of early childhood education. Includes historical and contemporary influences; pedagogy; agency management of early childhood programs; early childhood assessment; and professional responsibilities.

*Information: CDA 102, 121, and 271 together constitute ECE 118. Students must have college-level reading and writing skills to be successful in ECE courses.*

**ECE 124 Math and Science for Children**

3 credit hours, 3 periods (3 lec.)

Theories, methods, and techniques for teaching math and science. Includes central concepts in math and science, communication skills, assessment, integration into other subject areas, teaching methods, and developmentally appropriate practices.

*Information: All ECE courses require college-level reading and writing skills. This course replaces CDA 142, CDA 143, and CDA 152.*

**ECE 125 Nutrition, Health, and Safety for the Young Child**

3 credit hours, 3 periods (3 lec.)

In-depth study of the health, safety and nutritional needs of children. Includes children's nutritional needs, caregiver responsibilities, food allergies, promoting healthy attitudes, illness prevention, record keeping, promotion of health and safety, safe environments, and community resources.

*Information: All ECE classes require college-level reading and writing skills. This course replaces CDA 104, CDA 119, and CDA 151.*

**ECE 129 Infant and Toddler Education**

3 credit hours, 3 periods (3 lec.)

Examination of effective teaching and guidance practices during infant and toddler years. Includes theory, relationships, assessment, curriculum, guidance, and professionalism in the context of providing education and care for the infant and toddler.

*Information: Students must have college-level reading and writing skills to be successful in all ECE classes.*

**ECE 211 Inclusion of Young Children with Special Needs**

3 credit hours, 3 periods (3 lec.)

Overview of the exceptional learner (birth to age 8). Includes educational implication and service delivery, public policy, identification and assessment, specific areas of exceptionality, service plans, support systems for families, national, state and local responsibilities, early intervention, and observational records. Also includes field experience.

*Prerequisite(s):* ECE 117.

*Information:* This course replaced ECE 111. Either ECE 111 or ECE 211 will meet the graduation requirement. *Information:* Students must have college-level reading and writing skills to be successful in ECE courses.

**ECE 226 Positive Child Guidance**

3 credit hours, 3 periods (3 lec.)

Introduction to theory and application of early childhood classroom planning, guidance techniques and classroom management. Includes application of developmental theories, developmentally appropriate practices, behavior management, cultural implications, teaching practices, professional development, and self-evaluation.

*Prerequisite(s):* ECE 117 and 118, completed with a grade of C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

*Information:* Includes a 9-hour practicum. In order to be successful in all ECE classes, students must have college-level reading and writing skills.

**ECE 228 The Young Child: Family, Culture, and Community**

3 credit hours, 3 periods (3 lec.)

Examination of the influences of family, culture and community on the development and learning of young children. Includes development of personal framework for understanding cultures; cultural differences in attitudes about play; age and cultural appropriateness of classroom materials; cross-cultural communication techniques; techniques for utilizing family strengths; strategies for involving families in the school and classroom; strategies for developing flexible response practices; and community project development.

*Prerequisite(s):* ECE 117 and 118, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

*Information:* This course replaced ECE 128. Either ECE 128 or 228 will meet the graduation requirement. In order to be successful in all ECE classes, students must have college-level reading and writing skills.

**ECE 240 Assessment of Young Children**

3 credit hours, 3 periods (3 lec.)

Assessment techniques associated with the evaluation of young children. Includes observation methods, interpreting assessment data, legal and ethical issues related to assessment, methods and strategies, and application of assessment data.

*Prerequisite(s):* ECE 117, 118, 226, and 228, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

*Information:* In order to be successful in all ECE classes, students must have college-level reading and writing skills.

**ECE 245 Integrating Learning and Lesson Planning through the Arts**

3 credit hours, 3 periods (3 lec.)

Survey of principles, materials, techniques, and resources for teaching music/art to children. Includes selection of appropriate materials and activities, integration with basic child development ages/stages, creation of the appropriate environment, integration with other subject areas, and role of the teacher.

*Information:* Students must have college-level reading and writing skills to be successful in all ECE courses.

**ECE 246 Integrating Learning and Lesson Planning: Literacy**

3 credit hours, 3 periods (3 lec.)

Study of oral and written language acquisition and emergent literacy. Includes developmental theories, language integration, language rich environments, children's literature, and family involvement. Also includes selection of appropriate materials and activities, integration with basic childhood development ages/stages, creation of the appropriate environment, integration with other subject areas, and role of the teacher.

*Prerequisite(s):* ECE 117, 118, 226, and 228, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

*Information:* An approved child development course may be used in place of ECE 117. ECE 245 taken fall 2014-summer 2015, or ECE 110 (or ECE 110A and ECE 110B), or ECE 112 is considered to be the equivalent of this course. Students must have college-level reading and writing skills to be successful in ECE courses.

**ECE 292 Early Childhood Education: Theory to Practice**

4 credit hours, 16 periods (1 lec., 15 lab)

Practical experience in early child care and education. Includes developmentally appropriate practices, evaluation techniques, portfolio development, child advocacy, and self-evaluation. Also includes observation, assessment, documentation techniques, and 100 hours of documented work with children birth through prekindergarten.

**Prerequisite(s):** ECE 117, 118, 226, 228, 240, and 246, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

**Information:** An approved child development course may be used in place of ECE 117. Consent of instructor or program coordinator before enrolling in this course. A fingerprint clearance card, TB test, and certain immunizations are required. Students must have college-level reading and writing skills to be successful in ECE courses. Prerequisites will be waived for students who have achieved a passing score on the Arizona Educator Proficiency Assessment test #36 (Early Childhood Education) and test #93 (Professional Knowledge-Early Childhood).

## Economics

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ECN 150 An Economic Perspective**

3 credit hours, 3 periods (3 lec.)

The study of the interactions of individuals and societies from the viewpoint of economics. Includes the philosophy of economics, the history of economic thought, conventional economic theory, questions of equity versus efficiency, contemporary economic issues, microeconomics, macroeconomics, the individual and our democracy.

**ECN 150HC An Economics Perspective: Honors**

3 credit hours, 3 periods (3 lec.)

The study of the interactions of individuals and societies from the viewpoint of economics. Includes introduction to economics, conventional economic theory, economic policies and diverse populations, contemporary microeconomic and macroeconomic issues, and practical applications in relation to civic engagement. Also includes additional Honors content.

**Information:** Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**ECN 201 Microeconomic Principles**

3 credit hours, 3 periods (3 lec.)

The study of individual markets, which is where supply meets demand and prices and quantities are determined. Includes an examination of the production possibilities curve, market analysis, consumer theory, theory of the firm, conclusions, and contemporary microeconomic issues.

**Recommendation:** MAT 092.

**ECN 201HC Microeconomics Principles: Honors**

3 credit hours, 3 periods (3 lec.)

The study of individual markets, in which supply meets demand and prices and quantities are determined. Includes an examination of the production possibilities curve, market analysis, consumer theory, theory of the firm, conclusions, and contemporary microeconomic issues. Also Includes additional Honors content.

**Recommendation:** MAT 092.

**Information:** Must qualify for Honors program and obtain instructor or advisor/counselor approval to register for this course. Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a high quality, peer reviewed paper or project in a format appropriate for the discipline; presentation of research, in class or to a wider audience.

**ECN 202 Macroeconomic Principles**

3 credit hours, 3 periods (3 lec.)

The study of the economy as a whole. Includes an examination of the production possibilities curve, market analysis; definitions of gross domestic product, inflation, and unemployment; fiscal policy, monetary policy; and contemporary macroeconomic principles.

**Recommendation:** MAT 092.

**ECN 202HC Macroeconomics Principles: Honors**

3 credit hours, 3 periods (3 lec.)

The study of the economy as a whole. Includes the production possibilities curve, market analysis; definitions of gross domestic product, inflation, and unemployment; fiscal policy, monetary policy; and contemporary macroeconomic issues. Also includes additional Honors content.

**Recommendation:** MAT 092.

**Information:** Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**ECN 296 Independent Study in Economics**

1-3 credit hours, 1-3 periods (1-3 lec.)

Independent study projects or special interest areas in economics under the supervision of a faculty member.

**Prerequisite(s):** ECN 201 and 202.

**Information:** May be taken two times for a maximum of six credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

## Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**EDU 200 Introduction to Education**

3 credit hours, 3 periods (3 lec.)

Provides students with an introductory overview of Education. Includes purposes of schools and schooling; characteristics of effective schools; diversity and its effects on schools, teachers, and students; social problems affecting schools; comparative education; curriculum issues and controversies; and technology's impact on schools and schooling. Also includes philosophical, legal, and financial issues facing today's schools; history of American education; and current trends in education reform.

**EDU 201 Diversity in Education**

3 credit hours, 3 periods (3 lec.)

Exploration of diversity represented in the school community, including culture, language, ethnicity, socio-economic status, ability, age, sexual orientation, and lived experiences. Includes factors that impact educational practices, shape our educational system, and influence student achievement. Also includes the application of knowledge of diversity to the teaching/learning process and the facilitation of positive interactions within the learning community; the development of collaborative relationships; and the support of student development and well-being.

**EDU 202 Introduction to the Exceptional Learner**

3 credit hours, 3 periods (3 lec.)

Foundations of special education, encompassing the characteristics of students with exceptionalities, laws governing special education, the role of the teacher working with exceptional learners, Individual Education Plans (IEPs), and the Special Education process. Includes current educational practices and theories related to instruction, classroom management, and assessment in special education. Also includes collaboration and communication supporting the success of students with exceptionalities.

**EDU 206 Relationships in Classroom Settings**

3 credit hours, 3 periods (3 lec.)

Introduction to basic classroom management principles. Includes management of curriculum, instruction, the physical environment, psychosocial factors, student motivation, and special groups. Also includes a focus on disruptive family involvement, managing student behavior, communication, stress management, and appropriate record keeping.

**Information:** This class requires 60 hours of volunteering in a local K-12 school. Students must select their site by the first EDU206 class session and must have a fingerprint clearance card and background check before participation. This process could take four weeks (students should check with the school district where they will be volunteering for details).

**EDU 241 Middle School Curriculum and Instruction**

3 credit hours, 3 periods (3 lec.)

Concepts, skills and research techniques for middle school teachers. Examination of constructivism, research, curriculum development and instruction, unit planning, assessment and evaluation, materials selection, teaching strategies, diversity, motivation and classroom management.

*Information: Education department approval is required before enrolling in this course. Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum. Meets Middle School Endorsement requirements in conjunction with other coursework. May be taken for Professional Development purposes.*

**EDU 242 Middle School Practicum**

3 credit hours, 3 periods (3 lec.)

Strategies and tools for middle school teaching; subject matter instruction methods; adolescent development and learning; diversity of learners and instruction; creating a positive learning environment; instruction planning and implementation; assessment; professionalism; and personal reflection.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 30-hour middle school practicum placement. Meets Middle School Endorsement requirements in conjunction with other coursework. May be taken for Professional Development purposes.*

**EDU 243 ESL Practicum**

3 credit hours, 3 periods (3 lec.)

Concepts, techniques, and on-site experience working with English Language Learners (ELL). Requires observations of ELL's in a variety of settings, evaluation of English as a Second Language (ESL) and Sheltered English Instruction, teaching techniques and actual experience in developing lessons and teaching ELL.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 30-hour ESL K-12 practicum. May be taken for Professional Development purposes.*

**EDU 244 Teaching Reading and Writing to ESL Students**

3 credit hours, 3 periods (3 lec.)

Introduction to teaching reading and writing in an English as a Second Language (ESL) setting. Includes teaching techniques, learning strategies and activities, and the six traits of writing, including reading and writing across the curriculum.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 10-hour practicum. May be taken for Professional Development purposes.*

**EDU 245 Linguistics**

3 credit hours, 3 periods (3 lec.)

Introduction to the nature, structure, and acquisition of language. Includes basic concepts of phonetics, phonology, morphology, syntax, semantics, psycholinguistics, language variation, and theories of first and second language acquisition.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum. May be taken for Professional Development purposes.*

**EDU 246 Assessment of ESL Students**

3 credit hours, 3 periods (3 lec.)

Introduction to the assessment of English as a Second Language (ESL) students, including knowledge of assessment, purposes of assessment, identification, placement, exit standards for students, linking assessment to instruction, and creating classroom assessments.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum. May be taken for Professional Development purposes.*

**EDU 247 Family and Community Involvement in ESL Student Instruction**

3 credit hours, 3 periods (3 lec.)

Introduction to involving families, school, and community in English as a Second Language (ESL) student learning. Includes research on the value of family/school connections, an overview of effective programs, analysis of practices and resources available, and information on how to develop a school action plan for increasing family and community involvement.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 10-hour practicum. May be taken for Professional Development purposes.*



**EDU 252 Reading Diagnosis, Decoding, Remediation and Practicum**

3 credit hours, 3 periods (3 lec.)

Fundamentals of diagnosis, decoding, and remediation of reading problems. Includes instruction techniques on administering, analyzing, and interpreting informal procedures, and using the results to plan a program of remediation.

*Prerequisite(s):* EDU 276 and 277.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education office for specific information.

**EDU 254 Literacy Development in the Primary Grades/Practicum**

3 credit hours, 3 periods (3 lec.)

Philosophy, information and strategies for literacy development in the primary classrooms. Includes literacy and language development theories, observation and assessment, family literacy, strategies for teaching, and motivation and management.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

**EDU 255 Content Area Reading Middle and Secondary Schools/Practicum**

3 credit hours, 3 periods (3 lec.)

Information and strategies in content area literacy and its fundamental role in instruction across the curriculum. Topics include: overview of content area literacy; active learning in the reading and writing process; comprehension, vocabulary, and study skill strategies; the role of literature in the content areas: writing as a tool for content area comprehension; assessment strategies and technology.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

**EDU 257 Special Topics: Children's Literature and Literacy/Practicum**

3 credit hours, 3 periods (3 lec.)

Strategies for using children's literature to support literacy development. Topics include: literature selection criteria, genre, response strategies, literature assessment, elements and styles of literature and poetry, ethnic and gender issues in children's literature, thematic unit building, response assessment, using children's literature to teach writing, and benefits of literature and response in the classroom.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

**EDU 268 Issues in Education**

1 credit hour, 1 periods (1 lec.)

Special topics in education with an emphasis on current issues. Includes issues and concepts relating to the National Board for Professional Teaching, standards, and future teaching practices. Also includes student learning, personal motivation, lesson plan development, behavior and ethics, and professional portfolio.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**EDU 270 Educational Technology and Curriculum Integration**

3 credit hours, 3 periods (3 lec.)

Introduction to topics and issues in educational technology. Includes electronic communications, basic productivity applications, computer system basics, multimedia and educational courseware and technology integration into the curriculum. Also includes planning for and evaluating educational technology, security, ethics and other issues in technology, and emerging technologies in education.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

**EDU 271 Introduction to Teaching**

3 credit hours, 3 periods (3 lec.)

Introduction to teaching for the prospective teacher focusing on the major models of teaching, the purposes served and the curriculum methods employed with each model. Also includes legal and ethical issues, teaching as a profession, and strategies and practices for increasing instructional effectiveness.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

**EDU 272 Educational Psychology**

3 credit hours, 3 periods (3 lec.)

Introduction to the basic principles of educational psychology relating to the areas of physical, psychological, moral, social and cognitive development. Includes personal and social development, cognitive processes in the classroom, behaviorism, constructivism, learning theorists, and assessment.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

**EDU 273 Introduction to Special Education**

3 credit hours, 3 periods (3 lec.)

Introduction to a variety of instructional, classroom management and assessment strategies pertinent to teaching in a special education program. Includes role and function of the special education teacher, preparing for instruction, constructing lesson plans, assessment, instruction, classroom management, instructional media learning tools, and special education compliance.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 10-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

**EDU 275 Classroom Management**

3 credit hours, 3 periods (3 lec.)

Mastery of the knowledge and skills necessary to create and maintain a positive classroom environment. Includes overview of classroom management, students' basic needs, creating positive interpersonal relationships, creating positive peer relationships, working with parents and student motivation and learning. Also includes developing standards for classroom behavior, responding to violations of rules and procedures, using problem solving techniques, developing individual behavior plans, and school- wide student management programs.

*Information:* Post-Degree Teacher Certification Program or Education Department approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

**EDU 276 Foundation of Reading Instruction**

3 credit hours, 3 periods (3 lec.)

Literacy instruction at the elementary school level. Includes literacy development theory; literacy development at the preschool, early childhood and intermediate grade level; instruction techniques for all facets of literacy development; and comprehension strategies, including bilingual learners and special populations. Also includes focus on organizing the classroom and curriculum to enhance literacy development, techniques and assessment as tools for instruction and working with parents to enhance student achievement.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 15-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information. Requires a paid subscription to TaskStream electronic portfolio.

**EDU 277 Phonics Instruction in a Balanced Literacy Setting/Practicum**

3 credit hours, 3 periods (3 lec.)

Overview and exploration of phonemic awareness, phonics instruction and related research findings. Includes quality literacy programming, understanding language and words, word study about letters and words, and thinking comprehensively.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 15-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information. Requires a paid subscription to TaskStream electronic portfolio.

**EDU 278 Elementary Science Methods and Curriculum Development**

3 credit hours, 3 periods (3 lec.)

Overview of the content and instructional methods of teaching science in kindergarten through eighth grade. Includes the academic content of teaching science, the instructional methods of teaching science, practical application, and observation and evaluation.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

**EDU 279 Elementary Math Methods and Curriculum Development**

3 credit hours, 3 periods (3 lec.)

Introduction to the content and methods of curriculum development in elementary math for the elementary and middle school teacher. Includes standards, resources, teaching math concepts, cooperative learning, topics, teaching aids, activity lessons, integrating mathematics lessons with other disciplines, and presenting a lesson.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

**EDU 280 Social Studies Methods and Curriculum Development**

3 credit hours, 3 periods (3 lec.)

Overview of the content and methodology of teaching social studies in kindergarten through eighth grade. Includes the social studies academic content, methods of teaching social studies instruction, and evaluation.

**Information:** *Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

**EDU 285 Secondary Teaching Methods**

3 credit hours, 3 periods (3 lec.)

Introduction to a variety of relevant secondary instructional, classroom management, and assessment strategies. Includes the role and function of the teacher in a secondary classroom setting, preparing for instruction, developing lesson plans, designing assessments, delivering instruction, managing the classroom, working with instructional media, and assisting special needs students.

**Information:** *Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

**EDU 290 Internship**

8 credit hours, 40 periods (40 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

**Information:** *This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval before enrolling in this course. EDU 290A, 290B, 290C and 290D together constitute EDU 290.*

**EDU 290A Internship I**

2 credit hours, 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork, and professional development and evaluation.

**Information:** *This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval before enrolling in this course. EDU 290A, 290B, 290C and 290D together constitute EDU 290.*

**EDU 290B Internship II**

2 credit hours, 10 periods (10 lab)

Continuation of EDU 290A, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork and professional development and evaluation.

**Information:** *This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval prior to registration. Information: EDU 290A, 290B, 290C and 290D together constitute EDU290.*

**EDU 290C Internship III**

2 credit hours, 10 periods (10 lab)

Continuation of EDU 290B, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork, and professional development and evaluation.

**Information:** *This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval prior to registration. EDU 290A, 290B, 290C and 290D together constitute EDU 290.*

**EDU 290D Internship IV**

2 credit hours, 10 periods (10 lab)

Continuation of EDU 290C, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork, and professional development and evaluation.

**Information:** *This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval prior to registration. EDU 290A, 290B, 290C, and 290D together constitute EDU 290.*

## Education - General/Post Degree

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### EDC 240 Adolescent Development

3 credit hours, 3 periods (3 lec.)

Examination of early to young adult adolescent development, investigation of developmental theories and methods, and comprehensive analysis of problems encountered by today's youth. Topic focus includes physical, cognitive, moral, and personality development; familial and peer relations; dating and sexuality; and psychosocial problems such as teen suicide, delinquency, and substance abuse. Also includes ethnic and cultural considerations in addition to educational and vocational issues.

*Information:* This course requires a 10-hour practicum. Meets the Fitness and Sport Sciences Coaching Certificate requirements in conjunction with other coursework.

### EDC 250 Introduction to Teaching

3 credit hours, 3 periods (3 lec.)

Introduction to teaching as a profession in the United States educational system. Includes professional teaching standards, school governance, and various perspectives on education (including historical, philosophical, social, legal, and ethical issues). Also includes an introduction to lesson planning, data literacy, and school culture and climate.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 250.

### EDC 251 Educational Psychology

3 credit hours, 3 periods (3 lec.)

Overview of how children develop (physically, psychologically, socially, and cognitively) and the ways in which this information guides instruction. Includes theories of how learning is constructed and describes various factors that impact learning, such as student differences, motivation, engagement, classroom management, differentiated instruction, metacognition, assessment, and teacher self-reflection.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 251.

### EDC 252 Survey of Exceptional Education

3 credit hours, 3 periods (3 lec.)

Introduction to the field of Exceptional Education. Includes history and current laws; special education processes and procedures; effective communication; techniques for collaboration and consultation with general and special education teachers and parents; and characteristics of students with exceptionalities. Also includes current and relevant trends in special education, technology, and effective instructional strategies and resources that meet the needs of learners with exceptionalities.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 252.

### EDC 253 Educational and Assistive Technology

3 credit hours, 3 periods (3 lec.)

Introduction for pre-service teachers to the uses of technology in the K-12 school environment to enhance and support instruction and learning, including assistive technology for students with exceptionalities. Includes legal and ethical issues, instructional practices that incorporate technology, assessment, and use of technology to connect with the broader school community. Also includes conducting research, creating presentations, observing classrooms via virtual practica, and creating lesson plans.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 253.

### EDC 254 Classroom Management: Elementary

3 credit hours, 3 periods (3 lec.)

Overview of classroom management styles and strategies that support student engagement and achievement in grades 1-8. Includes learner differences, motivation, interpersonal relationships, teacher expectations, communication, and collaboration. Also includes organizational strategies, procedures, routines, current trends and restorative practices.

*Prerequisite(s):* EDC 250 and 251.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

### EDC 256 Classroom Management: Secondary

3 credit hours, 3 periods (3 lec.)

Effective classroom management components that support student achievement and engagement in grades 7-12. Includes analysis of how learner differences, teacher expectations, effective communication, effective instruction, positive relationships, and restorative practices can impact learner behavior. Also includes self-assessment, classroom management strategies, including rules, procedures, and organizational strategies.

*Information:* Post Degree Teacher Certification Program approval is required before enrolling in this course.

**EDC 257 21st Century Learning**

3 credit hours, 3 periods (3 lec.)

Introduction to strategies, tools, and resources for teaching in today's classrooms. Includes K-12 content standards, instructional objectives, lesson planning, data literacy, and 21st century skills. Also includes benefits and challenges of technology integration and functions of technology.

*Information: Post Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 257.*

**EDC 262 Practicum 1: Elementary**

2 credit hours, 4 periods (1 lec., 3 lab)

In a grades 1-8 classroom placement, educator candidates will learn effective teaching strategies for elementary students through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 1-8 classroom.*

**EDC 263 Practicum 2: Elementary**

2 credit hours, 4 periods (1 lec., 3 lab)

In a grades 1-8 classroom placement, educator candidates will learn effective teaching strategies for elementary students through performance, personal reflection and discussions. Includes teaching strategies, effective assessment, matching learning styles to teaching strategies, data analysis, creating effective collaborations, effective use of the learning cycle, and enhancing learning with technology.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 1-8 classroom.*

**EDC 264 Practicum 1: Secondary**

2 credit hours, 4 periods (1 lec., 3 lab)

In a grades 6-12 classroom placement, educator candidates will learn effective teaching strategies for secondary students through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 6-12 classroom. EDC 265 Practicum 2: Secondary*

2 credit hours, 4 periods (1 lec., 3 lab)

In a grades 6-12 classroom placement, educator candidates will learn effective teaching strategies for secondary students through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 6-12 classroom.*

**EDC 266 Internship Practicum**

2 credit hours, 4 periods (1 lec., 3 lab)

Overview of the intern experience in a grades K-12 Educator Preparation Program (EPP) internship classroom. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, collaboration, and education laws.

*Information: Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. May be taken two times for a maximum of four credits; if this course is repeated, see a financial aid advisor or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**EDC 270 Elementary Methods: English Language Arts**

3 credit hours, 3 periods (3 lec.)

Emphasizes the application of theories, methods, and techniques for teaching English Language Arts (ELA) and Literacy in grades 1-8. Includes standards-based instruction, elements of effective instruction, differentiation, 21st century skills, technology, and assessment.

*Prerequisite(s): EDC 252 and 257.*

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*



**EDC 271 Elementary Methods: Math**

3 credit hours, 3 periods (3 lec.)

Emphasizes the application of theories, methods, and techniques for teaching Mathematics in grades 1-8. Includes standards-based instruction, elements of effective instruction, differentiation, 21st century skills, technology, and data literacy.

*Prerequisite(s): EDC 252 and 257.*

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

**EDC 272 Elementary Methods: Reading/Phonics**

3 credit hours, 3 periods (3 lec.)

Overview of reading and phonics instruction at the elementary level (grades 1-8). Includes developmental stages of literacy and strategies for teaching phonics, phonemic awareness, vocabulary, decoding, fluency, and reading comprehension.

Emphasizes the use of various assessment tools to analyze miscues, diagnose learner needs, guide planning, and differentiate instruction.

*Prerequisite(s): EDC 254 and 270.*

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

**EDC 273 Elementary Methods: Science/Social Studies**

3 credit hours, 3 periods (3 lec.)

Emphasizes the application of theories, methods, and techniques for teaching Science and Social Studies (SS) in grades 1-8. Includes standards-based instruction, inquiry learning, problem-based learning, strategies to increase student engagement, 21st century learning, and digital technologies for Science and Social Studies instruction.

*Prerequisite(s): EDC 270 and 271.*

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

**EDC 274 Elementary Methods: Instruction Across the Curriculum**

3 credit hours, 3 periods (3 lec.)

Instructional methods for organizing and integrating Literacy and Math across the elementary curriculum. Includes interdisciplinary teaching strategies, inquiry learning, formative and summative assessment, unit planning, lesson planning, and technology integration. Also includes writing instruction and assessment.

*Prerequisite(s): EDC 270 and 271.*

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

**EDC 275 Secondary Methods: English Language Arts/Social Sciences**

3 credit hours, 3 periods (3 lec.)

Instructional methods in English Language Arts (ELA) and Social Sciences (SS) for the secondary teacher. Includes considerations in instructional design and assessment such as standards-based lessons and objectives; instructional strategies, including differentiated instruction; 21st century Learning skills; informal and formal assessment strategies; and analyzing data. Also includes domains and concepts central to the discipline, as well as methods for self-assessment in content knowledge and application.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

**EDC 276 Secondary Methods: Math/Science**

3 credit hours, 3 periods (3 lec.)

Instructional methods in Mathematics and Science for the secondary teacher. Includes considerations in instructional design related to mathematics and science such as the Essential Elements of Instruction (EEI), learning objectives, scaffolding instruction, cross-curricular instruction, differentiated instruction, assessment, instructional strategies, learning theories, identifying technology resources, Arizona College and Career Ready Standards, and Arizona Science Standards/Next Generation Science Standards. Also includes factors impacting student learning and achievement such as teacher bias, socio-economic status, gender, language, culture, special needs, teacher expectations, motivation, engagement, and classroom management.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

**EDC 277 Secondary Methods: Instruction Across the Curriculum**

3 credit hours, 3 periods (3 lec.)

Instructional methods focused on integrating English Language Arts (ELA)/Literacy and Math across secondary curriculum with a focus on strategies aligned with the Arizona College and Career Ready Standards (AZCCRS), Arizona Social Studies Standards, and Arizona Science Standards/Next Generation Science Standards. Includes the Essential Elements of Instruction (EEI), designing developmentally appropriate instruction, cross-curricular instruction, and learner collaboration. Also includes strategies for incorporating 21st Century Learning Skills into the curriculum, data literacy strategies, and strategies that promote learner development of social and cultural perspectives that expand understanding of local and global issues.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*



**EDC 286 Structured English Immersion Methods**

3 credit hours, 3 periods (3 lec.)

Introduction to Structured English Immersion (SEI) methods, designed to meet state standards for pre-service and in-service educators of English Language Learners (ELLs). Includes SEI foundations, ELL proficiency standards, second language acquisition, home/school partnerships, assessment, data analysis, instructional strategies, digital tools, and lesson planning.

*Information:* Meets SEI Endorsement requirements for the Arizona Department of Education.

**EDC 291 Student Teaching: Elementary**

8 credit hours, 8 periods (8 lec.)

Introduction to the student teaching experience in a grades 1-8 Educator Preparation Program (EPP) Internship classroom. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, and collaboration.

*Information:* Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. EDC 291A and EDC 291B together constitute EDC 291.

**EDC 291A Student Teaching I: Elementary**

4 credit hours, 4 periods (4 lec.)

Overview of the student teaching experience in a grades 1-8 Educator Preparation Program (EPP) Internship classroom. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, and selecting appropriate teaching resources.

*Information:* Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. EDC 291A and EDC 291B together constitute EDC 291.

**EDC 291B Student Teaching II: Elementary**

4 credit hours, 4 periods (4 lec.)

Continuation of the student teaching experience in a grades 1-8 Educator Preparation Program (EPP) Internship classroom. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, and collaboration.

*Information:* Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. EDC 291A and EDC 291B together constitute EDC 291.

**EDC 292 Student Teaching: Secondary**

8 credit hours, 8 periods (8 lec.)

Overview of the student teaching experience in a grades 6-12 classroom placement. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting resources, interdisciplinary models, understanding and utilizing assessment data, Multiple Intelligence Theory, professional development, and collaboration with stakeholders.

*Information:* Admission to the Post-Degree Teacher Certification Program and Capstone readiness approval are required before enrolling in this course. This course requires 12 weeks (60 full instructional days) of field experience in a grades 6-12 classroom. EDC 292A and EDC 292B together constitute EDC 292.

**EDC 292A Student Teaching I: Secondary**

4 credit hours, 4 periods (4 lec.)

Introduction to the student teaching experience in a grades 6-12 Educator Preparation Program (EPP) Internship classroom. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, and collaboration.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. EDC 292A and EDC 292B together constitute EDC 292.

**EDC 292B Student Teaching II: Secondary**

4 credit hours, 4 periods (4 lec.)

Continuation of the student teaching experience in a grades 6-12 Educator Preparation Program (EPP) Internship classroom. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, and collaboration.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. EDC 292A and EDC 292B together constitute EDC 292.

## Special Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### EDS 250 Issues in Special Education

1 credit hour, 1 periods (1 lec.)

Overview of issues presented in public schools when special education services are provided to students with disabilities. Includes perspectives which challenge and support the delivery of services and examination of their consequences.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

### EDS 251 Legal Issues in Special Education

1 credit hour, 1 periods (1 lec.)

An introduction to legal issues in special education. Includes the history of special education law, Section 504 of the Rehabilitation Act, Americans with Disabilities Act, and the purpose, principles and amendments to the Individuals with Disabilities Education Act (IDEA) and its re-authorizations, application of free and appropriate public education to students with disabilities, least restrictive environment mandates. Also includes disciplinary procedures, transition plans, and key themes in legal regulations regarding the disabled.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

### EDS 252 Understanding Individuals with Disabilities Education Act

1 credit hour, 1 periods (1 lec.)

Overview and examination of the Individuals with Disabilities Education Act, 2004, which mandates students with disabilities be provided a free, appropriate public education. Includes an emphasis on the process of eligibility. Also includes the delivery of services to school age children.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

### EDS 253 Development and Implementation of IEPs

1 credit hour, 1 periods (1 lec.)

Overview and examination of an Individualized Education Program (IEP) required components. Includes how IEPs are developed for and utilized in the classroom. The roles and responsibilities of required members of IEP team will be reviewed and analyzed in relation to students, family members, and teachers. Also includes an emphasis on the cycle of creating, reviewing and revising an IEP to reflect the needs of students.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

### EDS 254 Classroom Management for Special Education

2 credit hours, 2 periods (2 lec.)

Overview of skills, methods and strategies for behavior management. Includes a foundation on how to recognize, evaluate, and respond to classroom situations. Also includes how to develop classroom management skills with educators, parents and students, as well as develop a behavior management plan for special needs students.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply. This class requires a 10-hour special education practicum.

### EDS 255 Assistive Technology for Special Education Teachers

3 credit hours, 3 periods (3 lec.)

An overview of the assistive technology devices and services that can assist a person with a disability to overcome the functional limitations of the disability. Includes the continuum of assistive technology devices, instructional designs for learning, curriculum adaptation and integration strategies, and assessment and evaluation protocols. Also includes how to make better choices about technology and individual needs.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

**EDS 256 Survey of Special Education**

3 credit hours, 3 periods (3 lec.)

Overview of special education foundations and issues. Includes special education issues: mental retardation, learning disabilities, Attention Deficit Hyperactivity Disorder (ADHD), emotional and behavioral disorders, gifted and talented, speech and language disorders, hearing and visual impairments, autism, and physical, health, and traumatic brain injuries. Also includes special education history, legislation, family effects, diversity, and educational considerations.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

**EDS 257 Diagnosis Assessment of Students w/Mild-Moderate Disabilities**

3 credit hours, 3 periods (3 lec.)

Concepts, skills, and techniques to diagnose and assess students with learning and mild-moderate disabilities. Includes how to develop screening, pre-referral, eligibility, and placement for individuals with exceptional learning needs skills. Includes an emphasis on informal assessment for instruction and on the introduction of formal assessment for special education eligibility. Also includes synthesizing, developing and writing a comprehensive report.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply. This class requires a 15-hour special education practicum.

**EDS 258A Foundations of Instruction Cross-Categorical**

2 credit hours, 2 periods (2 lec.)

Foundations of instruction for designated disabilities, including mild to moderate mental retardation, learning disabilities, emotional disabilities, and physical and other health impairments. Includes assessment, instruction, and instructional design; establishment and maintenance of case records; use of assessment data to design goals and objectives; development of Individualized Education Plans (IEPs). Also includes communication and consultation with teachers, families, students, administrators, and agencies; directing and monitoring activities of Paraprofessionals, aids, volunteers, and peer tutors; and modification of curriculum and instruction to accommodate student needs.

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

**EDS 259 Teaching Methods Cross-Categorical**

3 credit hours, 3 periods (3 lec.)

Overview of how to educate special-needs students while meeting their needs academically and socially. Includes methods of teaching students in the Special Education classroom, general education classroom; methods of collaboration with general education teachers and parents; and setting up your classroom for classroom management success. Also includes how to construct and carry out an effective lesson plan and develop an Individualized Education Program (IEP).

*Information:* Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply. This class requires a 15-hour special education practicum.

**EDS 260 Developmental Reading, Instruction, Assessment, Remediation**

3 credit hours, 3 periods (3 lec.)

Concepts, techniques and skills to teach struggling readers. Includes the components of reading. Includes the application of concepts to conduct assessments, instructional and remedial activities for struggling readers. Also includes how to participate in the Individualized Education Program (IEP) process to help develop long-range individualized instructional plans and create short-range goals and objectives considering an individual student's abilities, needs and learning environment.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 15-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Contact the Post-Degree Teacher Education office or the Arizona Department of Education Certification office for specific information. Requires a paid subscription to TaskStream electronic portfolio.

**EDS 290 Internship**

8 credit hours, 40 periods (40 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

*Information:* This course requires admission to the Post-Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration. EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

**EDS 290A Internship I**

2 credit hours, 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

*Information:* This course requires admission to the Post-Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration. EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

**EDS 290B Internship II**

2 credit hours, 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

*Information:* This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration. EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

**EDS 290C Internship III**

2 credit hours, 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

*Information:* This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration. EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

**EDS 290D Internship IV**

2 credit hours, 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

*Information:* This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration. EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

## Education - Special/Post Degree

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ESE 250 Introduction to Teaching**

3 credit hours, 3 periods (3 lec.)

Introduction to teaching as a profession in the United States educational system. Includes professional teaching standards, school governance, and various perspectives on education (including historical, philosophical, social, legal, and ethical issues). Also includes an introduction to lesson planning, data literacy, and school culture and climate.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 250.

**ESE 251 Educational Psychology**

3 credit hours, 3 periods (3 lec.)

Overview of how children develop (physically, psychologically, socially, and cognitively) and the ways in which this information guides instruction. Includes theories of how learning is constructed and describes various factors that impact learning, such as student differences, motivation, engagement, classroom management, differentiated instruction, metacognition, assessment, and teacher self-reflection.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 251.

**ESE 252 Survey of Exceptional Education**

3 credit hours, 3 periods (3 lec.)

Introduction to the field of Exceptional Education. Includes history and current laws, special education processes and procedures, effective communication, techniques for collaboration and consultation with general and special education teachers and parents, and characteristics of students with exceptionalities. Also includes current and relevant trends in special education, technology, and effective instructional strategies and resources that meet the needs of learners with exceptionalities.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 252.

**ESE 253 Educational and Assistive Technology**

3 credit hours, 3 periods (3 lec.)

Introduction for pre-service teachers to the uses of technology in the K-12 school environment to enhance and support instruction and learning, including assistive technology for students with exceptionalities. Includes legal and ethical issues, instructional practices that incorporate technology, assessment, and use of technology to connect with the broader school community. Also includes conducting research, creating presentations, observing classrooms via virtual practica, and creating lesson plans.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 253.

**ESE 254 Foundations of Instruction: Mild-Moderate Disabilities**

3 credit hours, 3 periods (3 lec.)

Framework for understanding and working with students with mild-moderate disabilities. Includes characteristics of students with mild-moderate disabilities and special education procedures and processes. Also includes collaboration and consultation practices; effective educational techniques to support the needs of learners with disabilities; assistive and educational technology; and current social, cultural, and/or academic trends.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**ESE 255 Classroom Management for Mild-Moderate Disabilities**

3 credit hours, 3 periods (3 lec.)

Effective classroom management components that support student achievement and engagement for students with mild-moderate disabilities in grades K-12. Includes how teacher expectations, effective communication, positive relationships, and restorative practices can impact learner behavior. Also includes organizing the physical environment, establishing effective classroom rules and procedures, Functional Behavioral Assessments (FBA), and Behavior Intervention Plans (BIP).

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**ESE 257 21st Century Learning**

3 credit hours, 3 periods (3 lec.)

Introduction to strategies, tools, and resources for teaching in today's classrooms. Includes K-12 content standards, instructional objectives, lesson planning, data literacy, and 21st century skills. Also includes benefits and challenges of technology integration and functions of technology.

*Information:* Post Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 257.

**ESE 260 Practicum 1: Mild-Moderate Disabilities**

2 credit hours, 4 periods (1 lec., 3 lab)

In a grades K-12 classroom placement, educator candidates will learn effective teaching strategies for students with mild-moderate disabilities through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades K-12 classroom.

**ESE 261 Practicum 2: Mild-Moderate Disabilities**

2 credit hours, 4 periods (1 lec., 3 lab)

In a grades K-12 classroom placement, educator candidates will learn effective teaching strategies for students with mild-moderate disabilities through performance, personal reflection and discussions. Includes teaching strategies, effective assessment, matching learning styles to teaching strategies, data analysis, creating effective collaborations, effective use of the learning cycle, and enhancing learning with technology.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades K-12 classroom.

**ESE 270 Methods of Instruction: Students/Mild-Moderate Disabilities**

3 credit hours, 3 periods (3 lec.)

Application of materials, strategies, methods, and techniques for creating lessons that promote mastery of learning and active participation for teaching students with mild-moderate disabilities. Includes Essential Elements of Instruction (EEI) and Arizona Academic Standards. Also includes the incorporation of differentiated instruction and technology into lesson planning.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**ESE 271 Mild-Moderate Methods: K-12 Inst. Across the Curriculum**

3 credit hours, 3 periods (3 lec.)

Instructional strategies for integrating English Language Arts (ELA)/Literacy and Math cross-disciplinary instruction for students with mild-moderate exceptionalities. Includes Arizona Academic Standards (AAS), lesson/unit planning, incorporating digital tools, strategies for critical thinking, differentiated instruction, and assessment.

*Prerequisite(s):* ESE 254 and 270.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**ESE 272 Developmental Reading, Instruction, Assessment, Remediation**

3 credit hours, 3 periods (3 lec.)

Comprehensive review of reading instruction for struggling learners. Includes reading development; characteristics of effective readers and those with difficulties; formal and informal assessment of phonics, fluency, phonemic awareness, comprehension, and vocabulary; and methods, materials, and techniques for teaching phonics, fluency, phonemic awareness, comprehension, and vocabulary. Also includes lesson planning, reading technology for home/school connection, and current academic reading trends.

*Prerequisite(s):* ESE 254 and 270.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**ESE 273 Diagnosis and Assessment of Mild-Moderate Disabilities**

3 credit hours, 3 periods (3 lec.)

A comprehensive review of measurement terminology, principles, ethical practices, and types; testing accommodations and modifications; testing bias; using technology to create forms of feedback; and creating informal assessments. Also includes cognitive processes that influence learning, data analysis, and the use of data to plan instruction.

*Information:* Post-Degree Teacher Certification Program approval is required before enrolling in this course.

**ESE 290 Student Teaching: Mild-Moderate Disabilities**

8 credit hours, 8 periods (8 lec.)

In a grades K-12 classroom placement having students with mild-moderate disabilities, educator candidates will observe and implement developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting appropriate teaching resources, interdisciplinary teaching models, gathering and analyzing student data, Multiple Intelligences Theory, professional development, and collaboration with stakeholders.

*Information:* Admission to the Post-Degree Teacher Certification Program and Capstone readiness approval are required before enrolling in this course. This course requires 12 weeks (60 full instructional days) of field experience in a grades K-12 classroom. ESE 290A and ESE 290B together constitute ESE 290.

**ESE 290A Student Teaching I: Mild-Moderate Disabilities**

4 credit hours, 4 periods (4 lec.)

Introduction to the student teaching experience in a grades K-12 Educator Preparation Program (EPP) Internship classroom having students with mild-moderate disabilities. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, and collaboration.

*Information:* Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. ESE 290A and ESE 290B together constitute ESE 290.

**ESE 290B Student Teaching II: Mild-Moderate Disabilities**

4 credit hours, 4 periods (4 lec.)

Continuation of the student teaching experience in a grades K-12 Educator Preparation Program (EPP) Internship classroom having students with mild-moderate disabilities. Includes classroom management, learning objectives, assessment, lesson planning, differentiation, and collaboration.

*Information:* Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. ESE 290A and ESE 290B together constitute ESE 290.



## Educational Technology Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### ETT 101 Introduction to Educational Technology

3 credit hours, 3 periods (3 lec.)

An introduction to educational technology exploring the current and emerging technologies available to teachers. Includes theoretical foundations of educational technology, technology enhanced instruction, digital technologies for the classroom, and an overview of productivity, school and classroom management software.

## Electrical Utilities Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### EUT 101 Introduction to Electrical Utilities

3 credit hours, 3 periods (3 lec.)

Overview of the electrical utility field. Includes electricity generation, generating station, generation, transmission, and distribution, power policies and procedures, radio procedures, electrical utility disciplines, human resources, and system protection.

### EUT 102 Electrical Distribution Math

3 credit hours, 3 periods (3 lec.)

Basic math operations related to electrical distribution. Includes the review of basic math, solving and converting, basic algebra, and Ohm's Law.

### EUT 103 Generation Steam Systems

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to steam systems, thermodynamics, and boiler operation. Includes steam as an energy generating source, steam system operation, and boilers. Also includes pressure and temperature control.

### EUT 104 Overhead and Underground Systems, Hardware, and Equipment

4 credit hours, 5 periods (3 lec., 2 lab)

Procedures for working in the overhead and underground distribution components. Includes pole hardware, overhead conductors, porcelain and polymer equipment, overhead transformers, underground equipment installation, electrical utility disciplines, and safety.

### EUT 106 Measuring Electricity

3 credit hours, 4 periods (2 lec., 2 lab)

Overview of the theories and devices used to measure electricity. Includes electric utility metering terminology, Blondel's theorem, kilowatt-hour meter operating principles, single-phase and network meters, wiring connections for mounting devices, voltmeter, voltage indicator, and ammeter usage, and Direct Current (DC), and Alternating Current (AC), circuits.

## Emergency Medical Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### EMT 089 Skills Reinforcement for EMT 100

2 credit hours, 4 periods (1 lec., 3 lab)

Overview, techniques, and skills for pre-hospital emergency response. Includes equipment operations, communication, documentation, packaging, and patient assessment.

*Recommendation:* Concurrent enrollment in EMT 100.

*Information:* Course supplements lecture time and laboratory experience for EMT 100.

### EMT 090 National Registry Skills Preparation

.5 credit hours, .5 periods (.5 lec.)

Introduction to the practical portion of the EMT-B National Registry Skills stations. Includes introduction to the six stations required for EMT-B certification. Also includes opportunity to serve as a patient in medical and trauma scenarios, and to practice hands on assessment with other students.

*Recommendation:* Designed for students enrolling in EMT 100 the following semester.

*Information:* Prepares students to serve as patients for National Registry testing.

**EMT 091 Ambulance Operations**

2 credit hours, 4 periods (1 lec., 3 lab)

Practical experience and safe operation of emergency vehicles. Includes operating an ambulance on a closed course to become familiar with its handling and operations, and subsequent completion of an obstacle course similar to the Emergency Vehicle Operators Course (EVOC). Also includes proper gurney operation and key safety matters pertaining to the use of lights and sirens.

*Recommendation:* Concurrent enrollment in EMT 100 or 110.

*Information:* Students must possess a valid driver's license.

**EMT 092 Cardiac Monitor (EKG) for the EMT**

1.5 credit hours, 1.5 periods (1.5 lec.)

Introduction to the cardiac monitor or electrocardiograph (EKG). Includes an in-depth look at the cardiac monitor, the many different cardiac rhythms students may encounter as an EMT, and discussion of various treatments for abnormal rhythms.

*Corequisite(s):* Concurrent enrollment in EMT 100 or 110.

*Information:* Not a substitute for Advanced Cardiac Life Support (ACLS), but appropriate for entry level EMT students. Ideal exploration course for those considering a career beyond EMT, such as Paramedic or Nursing.

**EMT 100 Emergency Medical Technology**

12 credit hours, 14 periods (11 lec., 3 lab)

Techniques of pre-hospital emergency medical care for the emergency medical technician. Includes history of emergency medical care delivery systems, roles and responsibilities of EMS providers, ethical and legal issues, and patient assessment. Also includes symptoms of illnesses, injuries, medical emergencies, appropriate medical techniques, triage, and ambulance operations.

*Information:* Students must be 18 years of age when class begins. Students must have CPR certification at the Healthcare Provider or Professional Rescuer Level and receive an appropriate score on the College reading assessment. Students must show proof of personal medical insurance and provide immunization records for MMR, TD, TB skin Test, and Varicella; flu vaccine is encouraged. Students must show proof of Arizona Department of Public Safety (AZ DPS) Fingerprint Clearance Card or proof of pending AZ DPS application approval (applications provided by the EMT Service Center. Students must meet College Admissions' requirements and create an Arizona Department of Health Services online account. Students must submit to drug screening (form provided by the EMT Service Center), and must meet with EMT staff prior to registration.

**EMT 106 Overview of Emergency Medical Services**

3 credit hours, 3 periods (3 lec.)

Overview of Emergency Medical Services (EMS). Includes health care delivery systems, medical terminology, ethics and professionalism, patient rights and responsibilities; communication; basic patient assessment; workplace and personal safety.

**EMT 109 Human Anatomy and Physiology for EMT**

3 credit hours, 3 periods (3 lec.)

Human anatomy and physiology for Emergency Medical Technicians (EMT). Includes basic physiology of the body systems and medical terminology addressed in the NREMT/AZDHS. Also includes patient assessment, differential diagnosis, and treatment pathways.

*Recommendation:* REA 112 or equivalent score on Reading assessment.

*Information:* Intended for students interested in EMT 100.

**EMT 110 Emergency Medical Responder**

3 credit hours, 3 periods (3 lec.)

Techniques in pre-hospital emergency care appropriate to the Emergency Medical Responder (EMR) Scope of Practice. Includes identifying signs and symptoms associated with illness and traumatic injuries. Also includes intervention used in managing patient and transfer of patient to higher level medical authority.

*Information:* This course will prepare those wishing to enroll in EMT 100. We will cover the DOT curriculum for EMR/EMT as well as the National Registry Practical portion of EMR. Course is designed to prepare eligible students for NREMT EMR examination.

**EMT 111 Heartsaver First Aid Provider**

.5 credit hours, .5 periods (.5 lec.)

Beginning first aid concepts and techniques for the lay person. Includes principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with either medical or traumatic injuries and complaints. Includes first aid general principles, medical, and trauma. Also includes adult Cardiopulmonary Resuscitation (CPR), Adult Automatic External Defibrillator (AED), and environmental emergencies.

*Information:* The Heartsaver First Aid and CPR and AED Provider Manuals are required.

**EMT 112 Heartsaver Cardiopulmonary Resuscitation**

.5 credit hours, .5 periods (.5 lec.)

Concepts and techniques to assess and treat patients with airway obstruction, respiratory, and cardiac arrest for the lay person. Includes the integration of principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with foreign body airway obstruction, respiratory and/or cardiac arrest. Includes choice of two topics: Adult Cardiopulmonary Resuscitation (CPR) and Pediatric CPR.

*Information:* Purchase of the Heartsaver CPR provider manual prior to class is required.

**EMT 113 Healthcare Provider Certification: BLS, HIPAA, OSHA and BBP**

2 credit hours, 4 periods (1 lec., 3 lab)

Overview of recommended cardiopulmonary resuscitation guidelines and national best practices for healthcare providers. Includes federal governances of personal and workplace safety within emergency services and medicolegal considerations. Also includes Occupational Safety and Health Administration regulations and recommendations. Also includes theory and practice for treatment of infants, children and adults in cardiac arrest or with airway obstructions.

*Information:* Upon successful completion of course, students may obtain American Heart Association Basic Life Support for healthcare provider CPR, American Heart Association Blood Borne Pathogens certification, American Heart Association First Aid certification, and Health Insurance Portability and Accountability Act awareness certification.

**EMT 140 Pre-Hospital Trauma Life Support**

1.5 credit hours, 2 periods (1 lec., 1 lab)

Concepts and techniques for evaluating assessment findings to formulate a field impression and implementation of a field treatment plan for a trauma patient. Includes systemic approach to patient assessment and management, airway and ventilation management, shock, soft tissue and burn injuries, isolated and multi-systems trauma, and various types of trauma patients.

**EMT 141 Pre-Hospital Trauma Life Support Refresher**

1.5 credit hours, 2 periods (1 lec., 1 lab)

Concepts and scenario-based techniques for evaluating assessment findings to formulate a field impression and implementation of a field treatment plan for a trauma patient. Includes a systemic approach to patient assessment and management, airway and ventilation management, shock, soft tissue and burn injuries, isolated and multi-systems trauma, and various types of trauma patients.

*Information:* Includes teaching and evaluation stations as a review and update for those students who have taken EMT 140.

**EMT 155 Advanced Medical Life Support (AMLS) Provider**

1.5 credit hours, 1.5 periods (1.5 lec.)

Overview, concepts and techniques to study medical emergencies related to adult patients. Includes a pragmatic approach and systematic format regarding patient assessment and management. Includes interactive scenario-based lectures with hands-on physical assessment of patients. Includes a global and initial assessment taking into account the patient's environmental and scene issues that allows the participant to formulate a general impression, determine the patient's stability, and explore the possibilities of differential diagnoses. Also includes using a systematic approach to obtain an initial assessment, vital signs, present illness, past medical, focused physical exam; the participant will be driven by the differential diagnoses.

*Information:* AMLS is an advanced course that assumes a previous working knowledge of medical emergencies, there are necessary prerequisites: EMT-B, EMT-I, EMT-P, RN, MD, DO, and other advanced level healthcare providers with at least one year of clinical experience. Participant must read the AMLS textbook before class and come to class prepared and complete the pre-test. EMT-B will have a separate pre-test and post-test written evaluation for EMT-Basic providers.

**EMT 158 Transition Training for EMT**

1.5 credit hours, 2.5 periods (1 lec., 1.5 lab)

Review of current techniques in pre-hospital emergency care for the basic Emergency Medical Technician (EMT). Includes signs and symptoms of illness, injuries, medical emergencies, appropriate medical techniques, and ambulance operations.

*Information:* EMT-B State of Arizona current certification is required before enrolling in this course. *Information:* May be taken six times for a maximum of nine credit hours.

**EMT 159 Cardiopulmonary Resuscitation: Healthcare Provider**

.5 credit hours, .75 periods (.25 lec., .5 lab)

Introduction to the techniques required to provide Cardiopulmonary Resuscitation (CPR) at the healthcare provider level. Includes introduction to body systems and disease states, which lead to cardiac and respiratory arrest. Also includes the assessment and intervention for the airway, respiration and central circulation.

*Information:* Course meets American Heart Association guidelines for the healthcare provider level. May be taken six times for a maximum of three credit hours.

**EMT 170 Advanced Life Support Operations**

1 credit hour, 1 periods (1 lec.)

Introduction to skills necessary to assess, extricate, and care for victims of crash incidents. Includes exposure to scene management skills to include size-up, disentanglement, victim stabilization for single and multi-victim situations, hazardous materials incidents, integration of local emergency medical services (EMS) for patient assessment and management, and standard operating procedures to selected victim scenarios.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 205 ALS Pharmacology and Medication Administration**

3 credit hours, 3.25 periods (2.75 lec., .5 lab)

Elements of pharmacological agents and their administration. Includes basic pharmacological background and actions of drugs, regulations, human body systems, and pharmacokinetics. Also includes medications for patient in an emergency setting, and pharmacological mathematics.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 214 ALS Advanced Special Considerations**

2.5 credit hours, 3 periods (2 lec., 1 lab)

Advanced life support skills approach to emergency care of the emotionally disturbed. Includes emotional aspects, approach to the patient, and psychiatric emergencies. Also includes techniques of management and demonstration of skills within a simulated hospital environment.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 218 Paramedic National Registry Preparation**

3.5 credit hours, 6 periods (1 lec., 5 lab)

Review and preparation in standards of paramedic emergency care at the state and national levels. Includes developing testing skills and questions related to assessment, analysis, intervention or evaluation. Also includes each component of the Emergency Medical Technician Paramedic National Standard Curriculum.

*Information:* Acceptance into a Paramedic program is required before enrolling in this course.

**EMT 219 ALS Foundations**

1.5 credit hours, 1.75 periods (1.25 lec., .5 lab)

Introduction to the Advanced Life Support (ALS) career field. Includes roles and responsibilities, Emergency Medical Services (EMS) components, well being, illness and injury prevention, ethics, medical and legal considerations.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 221 ALS Airway and Ventilation**

1.5 credit hours, 2 periods (1 lec., 1 lab)

Techniques for establishing and/or maintaining a patient's airway. Also includes anatomy and physiology, age specific techniques and procedures, introduction to respiratory pharmacology and respiratory drug profiling.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 222 ALS Patient Assessment and Assessment Based Management**

1.5 credit hours, 1.75 periods (1.25 lec., .5 lab)

Skills to take a proper history and perform an advanced physical assessment on an emergency patient, and communicate the findings to the patient and others. Includes the physical exam, integrative and on-going exams, communications and documentation. Also includes the implementation of a management plan for patients with common complaints and injuries, dispatch scenarios, scene size-up and forming impressions.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 223 ALS Trauma Emergencies and Systems**

2 credit hours, 2.25 periods (1.75 lec., .5 lab)

Techniques to formulate a field impression and implement the treatment plan for the trauma or shock patient. Includes shock, burn injuries, and isolated and multi-systems trauma.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 224 ALS Medical Emergencies**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to the utilization of assessment findings to formulate a field impression and implement the treatment plan for the medical patient. Includes respiratory, cardiovascular, neurological, endocrine, allergic, toxic, abdominal and urologic, environmental, behavioral and gynecological emergencies.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 225 ALS Special Medical Considerations**

2 credit hours, 2.25 periods (1.75 lec., .5 lab)

Introduction to special medical consideration concepts. Includes utilizing assessment findings to formulate a field impression and implement the treatment plan for obstetric, neonatal, pediatric, geriatric, and chronic-care patients.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 227LC ALS Practicum: Clinical Lab**

3 credit hours, 9 periods (9 lab)

Techniques for performing skills and completing documentation in accordance with established guidelines, orders, and protocols for critical care, emergency department, labor and delivery, pediatrics, and other specialty units. Includes applying skills associated to the scope of practice for the Advanced Life Support (ALS) Professional.

*Information:* Acceptance into an ALS Training Program is required before enrolling in this course.

**EMT 228LC ALS Practicum: Vehicular Lab**

3 credit hours, 9 periods (9 lab)

ALS vehicular lab concepts. Includes techniques for performing and documenting in accordance with established guidelines, orders, and protocols, and acting within the scope of practice of the ALS Professional and under medical supervision during a vehicular lab.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 230 Basic ECG Interpretation**

1.5 credit hours, 1.75 periods (1.25 lec., .5 lab)

Introduction to all levels of emergency care providers with basic electrocardiographic (ECG) rhythm analysis. Includes interpretation and related care in a clinical and pre-hospital setting.

*Information:* Required content for the identification and treatment of cardiac emergencies. This course is designed for paramedics and paramedic students.

**EMT 233 Basic Cardiac Life Support Instructor**

.75 credit hours, .75 periods (.75 lec.)

Concepts, techniques, and skills in how to teach the Basic Cardiac Life Support of the Heartsaver First Aid Provider course. Includes basic principles, course management, personnel issues, time and resource management, and remediation.

*Information:* Provides the challenge portion of the American Heart Association (AHA) online course in Advanced Cardiac Life Support (ACLS). AHA certificate is required at the beginning of class.

**EMT 238 Advanced Cardiac Life Support Instructor**

1 credit hour, 1 periods (1 lec.)

Overview, concepts, and techniques in how to teach the Advanced Cardiac Life Support in the Provider course. Includes basic principles, course management, personnel issues, time and resource management, and remediation.

**EMT 239 Pediatric Advanced Cardiac Life Support Instructor**

1 credit hour, 1 periods (1 lec.)

Overview, concepts, and techniques in how to teach Pediatric Advanced Cardiac Life Support (PALS) course to the provider. Includes pediatric basic principles, course management, personnel issues, time and resource management, and remediation.

**EMT 242 ALS Advanced Foundations**

2 credit hours, 2.5 periods (1.5 lec., 1 lab)

Foundations of skills and principles in preparing to be a paramedic. Includes medical terminology, the human body structure, and pathophysiology.

*Prerequisite(s):* EMT 219.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 244 ALS Advanced Medical Emergencies**

2.5 credit hours, 3 periods (2 lec., 1 lab)

Continuation of EMT 224. Advanced life support techniques using pre-hospital approaches to the recognition and intervention of medical emergencies related to toxicology, infectious disease, and hematology. Includes poisoning, drug overdose, and transmission of infectious diseases.

*Prerequisite(s):* EMT 224.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 247LC ALS Advanced Practicum: Clinical Lab**

3 credit hours, 9 periods (9 lab)

Continuation of EMT 227LC. In-hospital clinical procedures for the ALS professional. Includes placement in the clinical (hospital) setting for supervised skills application with real patients.

*Prerequisite(s):* EMT 227LC.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 248LC ALS Advanced Practicum: Vehicular Lab**

3 credit hours, 9 periods (9 lab)

Continuation of EMT 228LC. Pre-hospital emergency medical procedures for the ALS professional. Includes skills appropriate to the ALS scope of practice in the pre-hospital setting according to established protocols.

*Prerequisite(s):* EMT 228LC.

*Information:* Acceptance into the Paramedic program is required before enrolling in this course.

**EMT 250 Advanced Cardiac Care**

1.5 credit hours, 2 periods (1 lec., 1 lab)

Introduction to the integration of pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease/injury based on 3-lead and 12-lead cardiac monitoring and interpretation. Also includes information on cardiovascular anatomy and physiology, cardiovascular pathologies and management, and adjunctive diagnostics.

**EMT 251 Advanced Cardiac Care Refresher**

.75 credit hours, 1 periods (.5 lec., .5 lab)

Review of the integration of pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease/injury based on 3-lead and 12-lead cardiac monitoring and interpretation. Also includes information on cardiovascular anatomy and physiology, cardiovascular pathologies and management, and adjunctive diagnostics.

**EMT 252 Pediatric Advanced Life Support**

1.5 credit hours, 2 periods (1 lec., 1 lab)

Techniques for emergency services for children. Integrates physiological, psychological, and social changes throughout human growth and development. Includes information on pediatric assessment, airway management and respiratory emergencies, cardiovascular emergencies. Also includes information on neonatal emergencies, children with special healthcare needs, and Sudden Infant Death Syndrome (SIDS).

**EMT 253 Pediatric Advanced Life Support Refresher**

.75 credit hours, 1 periods (.5 lec., .5 lab)

Overview of techniques for emergency services for children. Integrated physiological, psychological, and social changes throughout human growth and development. Includes information on pediatric assessment, airway management and respiratory emergencies, cardiovascular emergencies. Also includes information on neonatal emergencies, children with special healthcare needs, and Sudden Infant Death Syndrome (SIDS).

**EMT 254 Advanced ECG Interpretation**

3 credit hours, 3.5 periods (2.5 lec., 1 lab)

Integration of pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease/ injury based on 3-lead and 12-lead cardiac monitoring and interpretation. Also includes information on cardiovascular anatomy and physiology, electrocardiographic monitoring, and adjunctive diagnostics.

*Prerequisite(s):* EMT 230.

**EMT 255 Instructional Strategies**

2 credit hours, 2.5 periods (1.5 lec., 1 lab)

Introduction for organization and preparation of curriculum materials for presentation. Includes instructor roles and responsibilities, legal issues, the adult learner, creating an effective learning environment, and instructional strategies and methods.

**EMT 258 Pediatric Education for Pre-Hospital Professionals**

1.5 credit hours, 2 periods (1 lec., 1 lab)

Foundations of skills and principles in dealing with pediatric patients in a pre-hospital setting. Includes information on the integration of the physiological, psychological, and social changes throughout human growth and development with assessment and communication strategies for patients of all ages.



**EMT 259 Pediatric Education for Pre-Hospital Professionals Refresher**

.75 credit hours, 1 periods (.5 lec., .5 lab)

Overview of the foundations of skills and principles in dealing with pediatric patients in a pre-hospital setting. Includes information on the integration of the physiological, psychological, and social changes throughout human growth and development with assessment and communication strategies for patients of all ages.

**EMT 263 Tox-Medic**

1.5 credit hours, 1.5 periods (1.5 lec.)

Provides paramedics with the training required which authorizes them to perform a medical treatment or administer a drug when responding to a hazardous materials incident.

**EMT 295 ALS Independent Research**

3 credit hours, 3 periods (3 lec.)

Independent research in advanced pre-hospital care. Includes developing and writing an independent, applied research project, utilizing American Psychological Association (APA) style and format. Also includes exploration of current issues in Emergency Medical Services (EMS) or related subject matter through active research.

*Information: Research and writing will be done independently with assistance from the course instructor. Student will select a research topic with approval of course instructor.*

## Engineering

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ENG 102IN Problem-Solving and Engineering Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Design, effective team participation, and career preparation in engineering. Includes the different engineering fields and careers, basic skills associated with engineering problem solving and communication, the design process, participation in hands-on design projects, and ethics and professional responsibility.

*Prerequisite(s): MAT 189 or higher.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

**ENG 105 Introduction to MATLAB I**

1 credit hour, 1 periods (1 lec.)

Fundamental knowledge and practical abilities in MATLAB utilizing technical numerical computations in engineering courses. Includes script files, creating arrays, mathematical operations with 1-D arrays, two dimensional plots, and polynomials.

*Prerequisite(s): MAT 220.*

**ENG 110IN Solid State Chemistry**

4 credit hours, 6 periods (3 lec., 3 lab)

Fundamental principles of the chemistry of condensed states of matter including metals, polymers, molecular solids, and ceramics. Includes quantization, atomic structure, bonding, band and crystalline structure, conductivity, thermodynamics, and phase diagrams. Also includes electrochemistry and electrochemical devices, glass, optical properties and devices, and semiconductor devices.

*Prerequisite(s): CHM 151IN and MAT 220 or concurrent enrollment.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

**ENG 120IN Civil Engineering Graphics and Design**

3 credit hours, 7 periods (1 lec., 6 lab)

Introduction to civil engineering graphics and design using sketching and computer-aided design (CAD) Civil 3D software. Includes engineering basic applications, basic math and geometry, basic math and algorithms, corridor development, site grading and earthwork concepts, piping and draining concepts, surveying concepts and procedures, and visualization and construction documents.

*Prerequisite(s): MAT 189.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

**ENG 122IN Engineering Graphics and Design with Solid Modeling**

3 credit hours, 7 periods (1 lec., 6 lab)

Introduction to engineering graphics and the concepts of engineering design. Includes sketching, dimensioning practices and tolerances, computer-aided design (CAD), basic part modeling, and three-dimensional (3D) assembly modeling.

*Prerequisite(s): MAT 189.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

**ENG 130IN Elementary Surveying**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the subject of surveying as it pertains to the field of civil engineering. Includes measurement of distances, leveling, profiling and grade calculations, measurement of angles, remote elevations, and traverse closure. Also includes topographic surveys, public land surveying, and land ownership.

*Prerequisite(s):* MAT 189.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**ENG 175IN Computer Programming for Engineering Applications I**

3 credit hours, 5 periods (2 lec., 3 lab)

Programming in C with emphasis on numerical applications in engineering. Includes structure of C programs; data types, operations, and basics of C; selection, repetition, arrays, functions, and data files.

*Prerequisite(s):* MAT 189.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**ENG 205 Introduction to MATLAB II**

1 credit hour, 1 periods (1 lec.)

Fundamental knowledge for problem solving and programming using MATLAB. Includes creating arrays, mathematical operations with 2-D arrays, curve fitting and interpolation, programing in MATLAB, functions and function files, three-dimensional plots, and solving a system of linear equations.

*Prerequisite(s):* ENG 105.

**ENG 210 Engineering Mechanics: Statics**

3 credit hours, 3 periods (3 lec.)

Engineering analysis of static mechanical systems. Includes statics of particles, rigid bodies and equilibrium, distributed forces, analysis of structure, forces in beams and cables, friction, and moments of inertia.

*Prerequisite(s):* MAT 231 and PHY 210/210LB or 210IN.

**ENG 218 Fluid Mechanics**

4 credit hours, 4 periods (4 lec.)

Introduction and fundamental concepts of fluid dynamics and fluid statics. Includes basic equations for a control volume, fluids in motion, inviscid flow, dimensional analysis, flow in pipes and ducts, and boundary layers.

*Prerequisite(s):* ENG 210 and MAT 241.

**ENG 220 Engineering Mechanics: Dynamics**

4 credit hours, 4 periods (4 lec.)

Study of the motion of bodies under the action of forces. Includes introduction to dynamics, kinematics of particles and rigid body, and kinetics of particles and rigid body.

*Prerequisite(s):* ENG 210, and MAT 241.

**ENG 230 Mechanics of Materials**

4 credit hours, 4 periods (4 lec.)

Introduction to the analysis and design of the mechanical properties of materials. Includes the concept of stress and strain, axially loaded members, torsion, stresses and strains in beams, analysis of stress and strain, deflections of beams, statically indeterminate beams, and columns.

*Prerequisite(s):* ENG 210.

**ENG 232 Thermodynamics**

4 credit hours, 4 periods (4 lec.)

Basic laws and examples of engineering applications of macroscopic thermodynamics. Includes an introduction to concepts and definitions, energy and the first law of thermodynamics, evaluating properties, control volume energy analysis, the second law of thermodynamics, using entropy, vapor power systems, gas power systems, and refrigeration and heat pump systems.

*Prerequisite(s):* MAT 241 and PHY 210IN.

**ENG 260 Electrical Engineering**

3 credit hours, 3 periods (3 lec.)

Introductory survey of the electrical engineering discipline with emphasis on electrical power applications. Includes resistive circuits, inductance and capacitance, transients, steady-state sinusoidal analysis, and logic circuits. Also includes operational amplifiers, microcomputers, and diode electronics.

*Prerequisite(s):* MAT 231 and PHY 216IN.

**ENG 274IN Digital Logic**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the theory and design of digital logic circuits. Includes combinational logic design, sequential logic design, combinational and sequential component design, register-transfer level design, optimizations and tradeoffs, and physical implementation.

*Prerequisite(s):* MAT 231 and PHY 216IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**ENG 276IN Computer Programming for Engineering Applications II**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced programming in C for engineering applications. Includes review of C programming, memory concepts, algorithms and analysis, and an introduction to C++

*Prerequisite(s):* ENG 175IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**ENG 282IN Basic Electric Circuits**

5 credit hours, 7 periods (4 lec., 3 lab)

Introduction to the fundamentals of alternating current (AC) and direct current (DC) circuits. Includes circuit variables, circuit elements, simple resistive circuits, techniques of circuit analysis, the operational amplifier; inductance, capacitance, and mutual inductance; response of first-order resistor-inductor (RL) and resistor-capacitor (RC) circuits, natural and step responses of RLC circuits, and sinusoidal steady-state analysis.

*Prerequisite(s):* MAT 231 and PHY 216IN.

*Corequisite(s):* MAT 262

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

## English as a Second Language

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ESL 060CM Oral Communication for Non-Native Speakers of English I**

4 credit hours, 4 periods (4 lec.)

High beginning-level communication for situations and tasks relevant to daily and academic life. Includes conversation about social and academic topics with communicative appropriateness and clarity. Also includes listening and speaking strategies and practice, basic vocabulary, study strategies, technology, and exploration of college resources.

*Prerequisite(s):* Required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

*Information:* Prerequisite may be waived with consent of instructor. See an ESL instructor for details.

**ESL 060MT Beginning Writing Mechanics and Technology**

1 credit hour, 1 periods (1 lec.)

Instruction and practice using beginning techniques for writing in English. Includes standard format and handwriting, writing mechanics, and basic technology skills for language learning.

*Prerequisite(s):* Required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL 060WG.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

**ESL 060PR Pronunciation I**

2 credit hours, 2 periods (2 lec.)

Pronunciation and spelling for non-native English speakers at the basic level. Includes basic sound-symbol patterns and production of corresponding sounds, and the stress, rhythm and intonation to develop fluency in communication.

*Prerequisite(s):* Required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL Oral Communication course (CM).

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

**ESL 060RV Reading & Vocabulary for Non-Native Speakers of English I**

4 credit hours, 4 periods (4 lec.)

High beginning-level reading and vocabulary skills for non-native speakers of English. Includes comprehension of narrative and informational texts, vocabulary, written tasks, information literacy, study strategies, college resources, and a community of readers.

*Prerequisite(s):* Required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

*Information:* Prerequisite may be waived with permission of instructor. See an ESL instructor for details.

**ESL 060WG Writing and Grammar for Non-Native Speakers of English I**

4 credit hours, 4 periods (4 lec.)

High beginning-level writing and grammar skills for non-native speakers of English. Includes rhetorical forms, writing processes and conventions, sentence structure, grammar, study strategies, technology, and college resources.

*Prerequisite(s):* Required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

*Information:* Prerequisite may be waived with consent of instructor. See an ESL instructor for details.

**ESL 070CM Oral Communication for Non-Native Speakers of English II**

4 credit hours, 4 periods (4 lec.)

Intermediate-level communication skills for increased fluency and comprehension. Includes conversation about social and academic topics with increased proficiency and clarity; listening and speaking strategies and practice; vocabulary building skills; study strategies; technology; and increased awareness of college resources.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 060CM with a grade of C or better.

*Recommendation:* Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

*Information:* Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 070CU Survey of American Culture**

1 credit hour, 1 periods (1 lec.)

Intermediate-level course on American culture for ESL students. Includes readings on various American culture topics, and vocabulary development.

*Prerequisite(s):* ESL 060RV with a C or better, or required score on ESL assessment test.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details. May be taken two times for a maximum of two credit hours.

**ESL 070MT Intermediate Writing Mechanics and Technology**

1 credit hour, 1 periods (1 lec.)

Instruction and practice using intermediate techniques for writing in English. Includes standard formats, writing mechanics, and intermediate technology skills.

*Prerequisite(s):* ESL 060WG with a C or better, or required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL 070WG.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

**ESL 070PR Pronunciation II**

2 credit hours, 2 periods (2 lec.)

Pronunciation for non-native English speakers at the intermediate level. Includes word stress, sentence stress and rhythm, and intonation patterns.

*Prerequisite(s):* ESL 060CM with a C or better, or required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL Oral Communication course (CM).

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

**ESL 070RV Reading and Vocabulary for Non-Native Speakers of English II**

4 credit hours, 4 periods (4 lec.)

Intermediate-level reading and vocabulary skills for non-native speakers of English. Includes comprehension of narrative and informational texts, vocabulary, written tasks, information literacy, study strategies, college

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 060RV with a grade of C or better.

*Recommendation:* Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

*Information:* Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 070WG Writing and Grammar for Non-Native Speakers of English II**

4 credit hours, 4 periods (4 lec.)

Intermediate-level academic writing and grammar skills. Includes rhetorical forms, writing process and conventions, sentence structure, grammar, study strategies, technology, and college resources.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 060WG with a grade of C or better.

*Recommendation:* Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

*Information:* Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 079EI Institute for American English and Culture I**

1-15 credit hours, 1-15 periods (1-15 lec.)

Intermediate level English immersion program for non-English speaking international students. Includes English skills development in intermediate oral communication, writing, reading, and vocabulary; and exploration of cross-cultural issues.

*Information:* Restricted registration. See an international advisor for further information. Extent of emphasis placed on specific activities and objectives in Program I will vary depending on audience and number of credits.

**ESL 080CM Oral Communication for Non-Native Speakers of English III**

3 credit hours, 3 periods (3 lec.)

High intermediate-level communication skills for increased fluency and comprehension. Includes listening comprehension and retention, speaking and academic presentations, and communicative appropriateness.

*Prerequisite(s):* Score of 48 on ESL assessment test OR completion of ESL 070CM and ESL 060RV and ESL 060WG with a grade of C or better OR score of 39 on ESL assessment test and completion of ESL 070CM with a grade of C or better.

*Recommendation:* Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

*Information:* Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 080MT Advanced Writing Mechanics and Technology**

1 credit hour, 1 periods (1 lec.)

Instruction and practice using advanced techniques for writing in English. Includes standard formats, writing mechanics, and advanced technology skills.

*Prerequisite(s):* ESL 070WG with a C or better, or required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL 080WG or 085WG.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

**ESL 080PR Pronunciation III**

2 credit hours, 2 periods (2 lec.)

Pronunciation for non-native English speakers at the advanced level. Includes word stress and vowel reduction, sentence stress and rhythm, and intonation and phrasing.

*Prerequisite(s):* ESL 070CM with a C or better, or required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL Oral Communication course (CM).

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

**ESL 080RV Reading & Vocabulary for Non-Native Speakers of English III**

4 credit hours, 4 periods (4 lec.)

High intermediate-level reading and vocabulary skills for non-native speakers of English. Includes comprehension of narrative and informational texts, vocabulary, written tasks, information literacy, study strategies, college resources, and a community of readers.

*Prerequisite(s):* Score of 48 on ESL assessment test OR completion of ESL 070RV and ESL 060CM and ESL 060WG with a grade of C or better OR completion of ESL 070RV with a C or better and score of 39 on ESL assessment test.

*Recommendation:* Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

*Information:* Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 080WG Writing and Grammar for Non-Native Speakers of English III**

4 credit hours, 4 periods (4 lec.)

High intermediate-level academic writing and grammar skills. Includes rhetorical forms, writing process and conventions, sentence structure, grammar, study strategies, technology, and college resources.

**Prerequisite(s):** Score of 48 on ESL assessment test OR completion of ESL 070WG and ESL 060RV and ESL 060CM with a grade of C or better, OR score of 39 on ESL assessment test and completion of ESL 070WG with a grade of C or better.

**Recommendation:** Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

**Information:** Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 085CM Oral Communication for Non-Native Speakers of English IV**

3 credit hours, 3 periods (3 lec.)

Advanced-level academic communication skills for increased fluency and comprehension. Includes listening comprehension and retention, speaking and oral presentations, communicative appropriateness, and critical thinking skills.

**Prerequisite(s):** Score of 57 on ESL assessment test OR completion of ESL 080CM and ESL 070RV and ESL 070WG with a grade of C or better OR score of 48 on the ESL assessment test and completion of ESL 080CM with a grade of C or better.

**Recommendation:** Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

**Information:** Prerequisites may be waived with consent of instructor. See an ESL instructor for details. This course may be taken at the 085 or 088 level.

**ESL 085RV Reading and Vocabulary for Non-Native Speakers of English IV**

4 credit hours, 4 periods (4 lec.)

Advanced-level reading and vocabulary skills for non-native speakers of English. Includes comprehension of narrative and informational texts, selections from college textbooks, vocabulary, written tasks, information literacy, study strategies, college resources, and a community of readers.

**Prerequisite(s):** Score of 57 on ESL assessment test OR completion of ESL 080RV and ESL 070CM and ESL 070WG with a grade of C or better OR completion of ESL 080RV with a grade of C or better and score of 48 on ESL assessment test.

**Recommendation:** Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

**Information:** Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 085WG Writing and Grammar for Non-Native Speakers of English IV**

4 credit hours, 4 periods (4 lec.)

Advanced-level academic writing and grammar for non-native speakers of English. Includes rhetorical forms, writing process and conventions, sentence structure, grammar, study strategies, technology, and college resources.

**Prerequisite(s):** Score of 57 on ESL assessment test OR completion of ESL 080WG and ESL 070RV and ESL 070CM with a grade of C or better OR score of 48 on the ESL assessment test and completion of ESL 080WG with a grade of C or better.

**Recommendation:** Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and ESL Oral Communication course (CM) according to previous course completion or ESL assessment test score.

**Information:** Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 088RV Reading and Vocabulary for Non-Native Speakers of English V**

4 credit hours, 4 periods (4 lec.)

High advanced-level reading and vocabulary skills for non-native speakers of English. Includes comprehension of narrative, informational, and college textbooks; vocabulary at a high advanced level, written tasks, information literacy, study strategies, college resources, and a community of readers.

**Prerequisite(s):** Score of 65 on ESL assessment test OR completion of ESL 085RV and ESL 080CM and ESL 080WG with a grade of C or better OR score of 57 on ESL assessment test and completion of ESL 085RV with a grade of C or better.

**Recommendation:** Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

**Information:** Prerequisites may be waived with consent of instructor. See an ESL instructor for details.



**ESL 088WG Writing and Grammar for Non-Native Speakers of English V**

4 credit hours, 4 periods (4 lec.)

High advanced-level academic writing and grammar for non-native speakers of English. Includes rhetorical forms, writing process and conventions, sentence structure, grammar, study strategies, technology, and college resources.

**Prerequisite(s):** Score of 65 on ESL assessment test OR completion of ESL 085WG and ESL080RV and ESL 080CM with a grade of C or better OR score of 57 on ESL assessment test and completion of ESL 085WG with a grade of C or better.

**Recommendation:** Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

**Information:** Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

**ESL 089EI Institute for American English and Culture II**

1-15 credit hours, 1-15 periods (1-15 lec.)

Advanced level English immersion program for non-English speaking international students. Includes English skills development in advanced oral communication, writing, reading, and vocabulary; and exploration of cross-cultural issues.

**Information:** Restricted registration. See an international advisor for further information. Extent of emphasis placed on specific activities and objectives in Program II will vary depending on audience and number of credits.

## Environmental Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ENV 105 Humanity and the Environment**

3 credit hours, 3 periods (3 lec.)

Technical, sociocultural, and political information on environmental science and technology for non-ENV majors. Includes ecosystems, population impacts, hydrological systems, air pollution, and environmental toxins. Also includes current topics such as the green house effect, acid rain, drinking water contamination, toxic waste spills, governmental regulation and enforcement, and future environmental trends.

**Corequisite(s):** ENV 105LB

**Information:** Same as ANT 105.

**ENV 105LB Humanity and the Environment Discovery Laboratory**

1 credit hour, 3 periods (3 lab)

Laboratory exercise and field trip experiences as applied to the relationship between humanity and the environment. Includes examining ecology and biodiversity, healthy carrying capacity models, and waste by-products and their sources. Also includes designing pollution prevention and sustainable campus/town models, developing increased environmental ethics in our society, and anthropological relationships to the environment.

**Corequisite(s):** ENV 105

**Information:** This laboratory course satisfies the fourth credit hour of the Biological and Physical Science general education transfer credit if taken along with ENV 105. **Information:** Same as ANT 105LB.

## Fashion Design and Clothing

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**FDC 110 Clothing Construction I**

3 credit hours, 5 periods (2 lec., 3 lab)

An introduction to basic clothing construction techniques designed for inexperienced sewers. Includes terminology, tools and equipment, garment pattern components, fabric components, interfacing, and construction sample and pressing techniques.

**FDC 111 Clothing Construction II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of FDC 110. Intermediate principles of clothing construction. Includes planning the garment, preparation of garment pieces, assembly, unit production, and evaluation.

**Prerequisite(s):** FDC 110 with a B or better.

**Information:** Prerequisite may be waived with consent of instructor.

**FDC 112 Pattern Fitting**

3 credit hours, 5 periods (2 lec., 3 lab)

Methods of altering commercial patterns and principles of fitting garments. Includes body types, fitting commercial patterns, constructing muslin garments, fitting goals, and demonstration of fitting principles.

*Prerequisite(s):* FDC 110 with a grade of B or better.

*Information:* Prerequisite may be waived with consent of instructor.

**FDC 121 Flat Pattern Making**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the flat pattern method of pattern making for apparel production. Includes principles of pattern manipulation, practical applications, and evaluating the applications to a selected design project.

*Recommendation:* Completion of FDC 111 before enrolling in this course.

**FDC 122 History of Clothing**

3 credit hours, 3 periods (3 lec.)

Introduction to clothing and personal decoration as a reflection of the wearer's culture, time and place. Includes definition of essential characteristics in the western world, evolution of clothing, geographical and chronological grouping, and areas of analysis through research and projects.

**FDC 123 Computer Patternmaking I**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to patternmaking for apparel production using computer software. Includes measurements, creating a basic set of slopers, checking sloper fit, and basic pattern concepts.

*Prerequisite(s):* FDC 121.

*Recommendation:* Completion of FDC 111 before enrolling in this course.

*Information:* Prerequisite may be waived with consent of instructor.

**FDC 126 Textiles**

3 credit hours, 5 periods (2 lec., 3 lab)

Study of textile fibers, yarns, fabrication, characteristics, methods of coloration, printing, finishes, and influence on product performance. Includes fiber content, fabric construction, fabric swatches, finishes and techniques, and textile trends.

**FDC 131 Fashion Styling**

3 credit hours, 3 periods (3 lec.)

Overview of the function of wardrobe in contemporary life. Includes U.S. and world trends, elements and principles of design applied to clothing selection and coordination, color, figure analysis, personal style, wardrobe evaluation, and hair and makeup as a key element in wardrobe and fashion styling.

**FDC 135 Fashion Show/Event Planning**

3 credit hours, 3 periods (3 lec.)

A survey of fashion direction, publicity and fashion event coordination. Includes development of an event, student fashion show production, and wrap up.

*Recommendation:* Completion of FDC 141 before enrolling in this course.

**FDC 141 Introduction to Fashion Design**

3 credit hours, 3 periods (3 lec.)

Survey of the business of apparel manufacturing and fashion design. Includes history of the industry, careers in fashion, designing the garment, influences on design, and organization of a clothing line.

**FDC 144 Fashion Drawing**

3 credit hours, 5 periods (2 lec., 3 lab)

Technical drawing of a garment on the fashion figure. Includes working on original designs and presenting them in a portfolio. Also includes fabrics and how to render them as well as a basic knowledge of garment construction.

*Recommendation:* Completion of ART 110 or 213 before enrolling in this course.

*Information:* Having prior drawing coursework would be beneficial, recommend ART 110 or 213 before enrolling in this course.

**FDC 148 Costume Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to basic design techniques for theater costumes. Includes identifying and applying elements, sketching and coloring, paper fabrication of costume design, script and character analysis, application of historical research, and production scheduling and budget.

*Information:* Same as THE 148. May be taken two times for a maximum of six credit hours.

**FDC 196 Independent Studies in Fashion Design and Clothing**

3 credit hours, 5- periods (2 lec., 3 lab)

Independent projects for continuing individual development in fashion design and clothing under the guidance of a faculty member.

*Information:* May be taken three times for a maximum of 9 credit hours. Students must have taken at least twelve (12) credit hours in FDC courses before enrolling in this course.

**FDC 199 Co-op: Fashion Design and Clothing**

1 credit hour, 1 periods (1 lec.)

Introduction to the work environment in the Fashion Apparel field. Includes the internship process, applying course work, oral and written communication skills, and self management on the job.

*Corequisite(s):*FDC 199WK

*Information:* Consent of instructor of department chair and successful completion of twelve (12) credit hours of FDC course work are required before enrolling in this course. *Information:* May be taken four times for a maximum of four credit hours.

**FDC 199WK Co-op Work: Fashion Design and Clothing**

1-5 credit hours, 5-25 periods (5-25 lab)

A supervised work environment in the Fashion Apparel field. Includes completion of hours, knowledge of fashion industry job site, demonstration of aptitudes and abilities, journal/record of daily experiences and observations, and maintaining a written and digital contact list.

*Corequisite(s):*FDC 199

*Information:* Consent of instructor or department chair and successful completion of twelve (12) credit hours of FDC course work are required before enrolling in this course. *Information:* May be taken four times for a maximum of twenty credit hours.

**FDC 211 Clothing Construction III**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of FDC 111. Advanced techniques in construction of clothing. Includes pattern layout options, construction techniques and principles applied to special fabrics, fabric selection for specialty garments, and evaluation.

*Prerequisite(s):* FDC 111 with a B or better.

*Information:* Prerequisite may be waived with consent of instructor.

**FDC 212 Tailoring: Jackets**

3 credit hours, 5 periods (2 lec., 3 lab)

Traditional and speed-tailoring methods for jackets utilizing advanced techniques and materials. Includes pattern alterations for jackets, buttonholes, welt pockets, shaping the interfacing, inner structure of jackets, and complete garment evaluation.

*Prerequisite(s):* FDC 211 with a grade of B or better.

*Recommendation:* Completion of FDC 112 with a grade of B or better before enrolling in this course.

*Information:* Prerequisite may be waived with consent of instructor.

**FDC 213 Tailoring: Pants and Shirts**

3 credit hours, 5 periods (2 lec., 3 lab)

Traditional and speed-tailoring methods for pants and shirts utilizing advanced techniques and materials. Includes pant construction, shirt construction, and completed garment evaluation.

*Prerequisite(s):* FDC 211 with a grade of B or better.

*Recommendation:* Completion of FDC 112 with a grade of B or better before enrolling in this course.

*Information:* Prerequisite may be waived with consent of instructor.

**FDC 214 Bridal and Formal Wear**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced construction techniques applied to specialty fabrics for formal wear. Includes client vs. customer, fitting the client, creating the muslin, constructing the formal wear garment, and closing contracts with the client

*Prerequisite(s):* FDC 211 with a grade of B or better.

*Recommendation:* Successful completion of FDC 212 before enrolling in this course.

*Information:* Prerequisite may be waived with consent of instructor.

**FDC 215 Sewing with Knits**

3 credit hours, 5 periods (2 lec., 3 lab)

Skills and techniques used in the construction of garments made from knit fabrics. Includes pattern selection, fabric selection, tools and equipment, pattern fit and alteration; layout, cutting, and marking; and construction techniques.

*Prerequisite(s): FDC 111 with a B or better.*

*Recommendation: Completion of FDC 211 with a grade of B or better before enrolling in this course.*

*Information: Prerequisite may be waived with consent of instructor.*

**FDC 218 Introduction to Accessory Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to accessory design as it relates to historical and current trends. Includes construction of a simple handbag, construction techniques for hats, belts, hair accessories, and pet fashions. Also includes marketing and merchandising accessories.

*Prerequisite(s): FDC 111.*

*Information: Proficiency test may be required for placement level.*

**FDC 221 Flat Pattern Making II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of FDC 121. Includes measurement, marking and fitting, review of sloper slash and spread methods of design, pattern preparation, determining garment patterns, garment construction, and evaluation of individual garment design and construction.

*Prerequisite(s): FDC 121.*

*Recommendation: Students should have a grade of C or higher in the prerequisite course before enrolling in this course.*

**FDC 223 Computer Patternmaking II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of FDC 123. Includes introduction to software pattern libraries, advanced computer flat patternmaking, and using computer-aided pattern design.

*Prerequisite(s): FDC 123.*

**FDC 231 Flat Patternmaking III**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of FDC 221. Application and analysis of advanced patternmaking techniques and principles of grading (sizing) base patterns. Includes advanced patternmaking techniques, review of sloper for design and fitting purposes, creation of original designs, grading, and evaluation of individual garment design and construction.

*Prerequisite(s): FDC 221 with a B or better*

*Information: Prerequisite(s) may be waived with consent of instructor.*

**FDC 241 Draping I**

3 credit hours, 5 periods (2 lec., 3 lab)

Application of design principles using the draping method of fashion design to create an original garment on a dress form. Includes review of essential design principles, muslin preparation, determining garment patterns, applying fabrics to the dress form, garment construction, and evaluation of individual garment design and construction.

*Recommendation: Completion of FDC 111 and 211 with a grade of B or better before enrolling in this course.*

**FDC 242 Draping II**

3 credit hours, 5 periods (2 lec., 3 lab)

Continuation of FDC 241. Advanced draping techniques for fashion design to include the design and construction of a formal apparel item. Includes muslin for advanced apparel designs, yardage calculation, specialty fashion fabrics, constructing the formal wear or bridal design, and formal apparel evaluation.

*Prerequisite(s): With a grade of B or better: FDC 211 and 241*

*Information: Prerequisite may be waived with consent of instructor.*

**FDC 245 Digital Fashion Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the use of computer software to design fashion and technical drawings. Includes the fashion work arena, features and applications used to create digital fashion drawings, vocabulary, terms and technical criteria, fashion software, and developing multiple color patterns and textures.

*Recommendation: Completion of ART 100, FDC 111 and 144 before enrolling in this course.*

**FDC 288 Portfolio Preparation**

3 credit hours, 5 periods (2 lec., 3 lab)

Overview of the development and marketing of a professional portfolio. Includes definition and evaluation of coherent bodies of work, documentation of work, preparation of portfolio production, production of a portfolio, parts of a portfolio, and marketing.

*Information:* For advanced students who have completed coursework in their specific areas. Portfolio concentrations will be determined in a conference between student and instructor. *Information:* Same as ART 288.

## Finance

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**FIN 100 Basic Principles of Organizational Finance**

1 credit hour, 1 periods (1 lec.)

Introduction to the fundamental principles of finance. Includes basic financial concepts in industry and banking, the role of financial decision-makers, financial statements, common ratios, time value of money, and investment decisions.

**FIN 107 Business Finance**

3 credit hours, 3 periods (3 lec.)

Fundamental principles of finance in profit-making, governmental, and not-for-profit organizations. Includes financial statements, common ratios, budgeting systems, cash forecasting, time value of money, investment decision, and break-even analysis.

**FIN 190 Internship in Finance**

1-3 credit hours, 5-15 periods (5-15 lab)

Supervised internship in a financial workplace. Includes experiences supervised by a professional in the field.

*Information:* Consent of instructor is required before enrolling in this course.

**FIN 217 Analyzing Financial Data**

1 credit hour, 1 periods (1 lec.)

Overview of financial data analysis. Includes income statement analysis and interpretation, retained earnings statement, balance sheets, statement of changes in financial position, sources of data, key financial ratios, and analysis procedures.

*Prerequisite(s):* ACC 211.

## Fire Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**FSC 101 Principles of Emergency Services**

3 credit hours, 3 periods (3 lec.)

Introduction to fire protection and emergency services. Includes career opportunities in fire protection and related fields, culture and history of emergency services, fire loss analysis, organization and function of public and private fire protection services, and fire departments as part of local government. Also includes laws and regulations affecting the fire service, fire service nomenclature, specific fire protection functions, basic fire chemistry and physics, introduction to fire protection systems, introduction to fire strategy and tactics, and life safety initiatives.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 110 Rope I**

1 credit hour, 1 periods (1 lec.)

Introduction to basic rope rescue: safety, equipment, rope craft, anchors, mechanical advantage, belay systems, medical considerations, identifying terrain types, low angle evacuations, steep angle evacuations and steep angle rappel. Includes performance in rope craft, anchor construction, mechanical advantage construction, belay technique, patient packaging, low angle evacuations, and steep angle rappelling.

*Information:* This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

**FSC 111 Rope II**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 110. Concepts, techniques, and skills for rope rescue areas: safety, ropecraft, advanced anchors, applied mechanical advantage, belay systems, self-rescue, and high angle pickoffs. Also includes knot passing through technical evacuation systems, rope rescue strategy, and tactics.

*Information:* This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

**FSC 112 Rope III**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 111. Concepts, techniques, and skills for advanced rope rescue areas: safety, rope craft, anchors, applied mechanical advantage, belay systems, self-rescue, high angle pickoffs, knot passing through technical evacuation systems. Also includes rescue tactics and strategies relating to vertical rescues.

*Prerequisite(s):* FSC 111.

*Information:* This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

**FSC 118 Swift Water Rescue for First Responders**

1 credit hour, 1 periods (1 lec.)

Concepts and techniques to prepare the emergency responder to perform swift water rescue. Includes rescuer safety and philosophy, river dynamics, hydrology and hazards, and methods of effecting swift water rescues including boat handling operations. Includes basic water accident management techniques in still water. Also includes the water accident portion of this course taught at a swimming pool and the practical application conducted in moving water.

*Prerequisite(s):* FSC 110, 111, 112.

*Information:* This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

**FSC 120 Fire Behavior and Combustion**

3 credit hours, 3 periods (3 lec.)

Introduction to the theories and fundamentals of fire behavior and combustion. Includes physical and chemical properties of fire, materials and their relationship to fire as fuel, and the use of water and other fire suppression agents and strategies.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 123 Building Construction Related to the Fire Service**

3 credit hours, 3 periods (3 lec.)

Introduction to components of building construction as related to firefighter and life safety. Includes elements of construction and structure design shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

*Prerequisite(s):* With a C or better: FSC 101 and 120

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 124 Fire Prevention**

3 credit hours, 3 periods (3 lec.)

Introduction to fundamental concepts relating to the field of fire prevention. Includes history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use and application of codes and standards, plans review, fire inspections, fire and life safety education, and fire investigation.

*Prerequisite(s):* FSC 101 and 120 with a C or better.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 125 Hydraulics and Water Supply**

3 credit hours, 3 periods (3 lec.)

Introduction to hydraulics and water supply in fire service. Includes theoretical foundations and principles of water use in fire protection, water distribution systems, and survey of hydraulic principles to analyze and to solve water supply problems.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 126 Fire Protection Systems in the Fire Service**

3 credit hours, 3 periods (3 lec.)

Introduction to fire protection systems in the fire service. Includes features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppressions systems, water supply for fire protection, and portable fire extinguishers.

*Prerequisite(s):* FSC 120 with a C or better.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.



**FSC 127 Principles of Emergency Services Safety and Survival**

3 credit hours, 3 periods (3 lec.)

Introduction to the basic principles and history related to national firefighter life safety initiatives. Includes cultural and behavioral change, organizational health, safety profile, research investigation, national health and safety, risk management, and publication education of fire and life safety.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 130 Strength and Fitness for the Fire Service**

2.5 credit hours, 2.5 periods (2.5 lec.)

Overview of fitness as it pertains to prospective firefighters. Includes endurance training, flexibility training, strength conditioning and use of equipment in Fire Incident Readiness Evaluation.

*Information:* Consent of instructor is required before enrolling in this course.

**FSC 149 Fire Operations I**

4 credit hours, 5 periods (3 lec., 2 lab)

Specialized classroom and practical experience in the techniques of firefighting. Includes the chemistry of fire, use of water and other agents, firefighting equipment and its uses, firefighting practices and safety.

*Information:* Completion of FSC 149 and 150 will help prepare the student for successful completion of State of Arizona Firefighter I & II practical evaluations. Only when taken as a part of the Pima Community College Fire Academy can students be concurrently enrolled in FSC 149 and 150.

**FSC 150 Fire Operations II**

4 credit hours, 5 periods (3 lec., 2 lab)

Specialized classroom and practical experience in the practices and techniques of fire fighting. Includes principles of community fire defense, methods of entry, rescue, tools, apparatus, equipment, salvage, hydraulics, and fire extinguishment.

*Prerequisite(s):* FSC 149.

*Information:* Completion of FSC 149 and 150 will help prepare the student for successful completion of State of Arizona Firefighter I & II practical evaluations. Only when taken as a part of the Pima Community College Fire Academy can students be concurrently enrolled in FSC 149 and 150.

**FSC 151 Introduction to Fire Science**

3 credit hours, 3 periods (3 lec.)

Historical and scientific background on the fire protection field. Includes the development and future of the field in America; governmental, industrial and private fire protection organizations and agencies; and employment and promotional opportunities.

*Recommendation:* Completion of FSC 149 prior to enrolling in this class or concurrent enrollment in FSC 149 and 150.

**FSC 152 Fundamentals of Fire Prevention**

3 credit hours, 3 periods (3 lec.)

Introduction to the principles of fire prevention. Includes authority, responsibility and organization of fire prevention, inspection procedures and reports, fire hazard recognition, building construction, and occupancy classifications. Also includes site access and means of egress, water-based fire protection and water supply systems, portable extinguishers, special agent, extinguishing systems, and fire detection and alarm systems, plans review, hazardous materials and flammable and combustible liquids, and storage, handling, and use of other hazardous materials.

*Prerequisite(s):* FSC 149.

**FSC 153 Hazardous Materials**

1.5 credit hours, 1.5 periods (1.5 lec.)

Basic chemical concepts and their applications to the field of fire science. Includes classes and properties of hazardous materials; recognition and identification of materials; management of materials in transit, in use, and in storage; and management of hazardous materials incidents.

*Information:* Equivalent to State of Arizona's First Responder, 40-hour course.

**FSC 154 Advanced Fire Prevention**

3 credit hours, 3 periods (3 lec.)

Introduction to high risk and industrial fire prevention. Includes code interpretation and application, research, implementing policy, testifying in legal proceedings, and creating forms and job aids. Also includes conducting field inspections and plans review, and building and fire code applications to simulated situations.

*Prerequisite(s):* FSC 152.

*Information:* Completion of this course will allow the student to test for Arizona State Certification as Inspector II.

**FSC 160 Wildland Firefighting**

3 credit hours, 3 periods (3 lec.)

Basic wildland firefighting. Includes locating and reporting the fire, incident operations and management, suppression equipment, fire behavior, size-up, methods of suppression, and safety.

*Information:* This course meets Arizona Center for Fire Service Excellence and Arizona Department of Forestry Guidelines for Wildland Firefighting Training.

**FSC 162 Hydraulics and Fire Suppression**

3 credit hours, 3 periods (3 lec.)

Principles of hydraulics as applied to fire suppression. Includes physical laws affecting the movement of water through pipes, hydrants, pumpers, hoses, etc.; functions and limitations of mechanical equipment to overcome these restrictions; effect of friction loss; head and pressure; water system; fire flow requirements; and organization for fire suppression.

*Prerequisite(s):* FSC 149, 150 and 151.

**FSC 163 Fire Apparatus and Equipment**

3 credit hours, 3 periods (3 lec.)

Overview, concepts, and techniques to use fire equipment. Includes automotive apparatus (pumpers, aerial ladders, lift platforms, hose wagons, transports and utility vehicles), water towers, heavy auxiliary mechanical equipment and appliances, generators, compressors, rescue and forcible entry tools and cutting torches.

*Prerequisite(s):* FSC 149, 150 and 151.

**FSC 167 Rescue Practices for the Fire Service**

2.5 credit hours, 2.5 periods (2.5 lec.)

Introduction to skills necessary to assess, extricate, and care for victims in emergency situations. Includes an overview of fire service-based rescue, rescue operations and incident management, and civilian versus firefighter rescue. Also includes why firefighters become victims and an overview of technical rescues.

*Prerequisite(s):* FSC 149.

**FSC 168 Special Hazard Tactical Problems**

3 credit hours, 3 periods (3 lec.)

Concepts and techniques designed for the experienced firefighter on successfully mitigating incidents that involve hazards that are not commonly experienced such as hazardous materials under fire conditions. Other examples may include a train derailment and biological attack. Also includes real-life incidents in order to learn from prior experiences, as well as practice with potential scenarios created from the surrounding area.

*Prerequisite(s):* FSC 153.

*Information:* Designed for experienced firefighters.

**FSC 170 Fire Service Leadership**

3 credit hours, 3 periods (3 lec.)

Practical training for fire service leadership and supervision. Includes decision-making, problem solving, running a meeting, managing multiple roles, creativity, power, and ethics. Also includes situational leadership, delegation, coaching, and discipline.

*Prerequisite(s):* FSC 149.

*Information:* This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III. *Information:* FSC 170A, 170B, and 170C together constitute FSC 170.

**FSC 170A Fire Service Leadership I**

1 credit hour, 1 periods (1 lec.)

Practical training for fire service leadership and supervision. Includes decision-making, problem solving, and running a meeting.

*Prerequisite(s):* FSC 149.

*Information:* This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III. *Information:* FSC 170A, 170B, and 170C together constitute FSC 170.

**FSC 170B Fire Service Leadership II**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 170A. Includes practical training for fire service leadership and supervision. Also includes managing multiple roles, creativity, power, and ethics.

*Prerequisite(s):* FSC 149.

*Information:* This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III. *Information:* FSC 170A, 170B, and 170C together constitute FSC 170.

**FSC 170C Fire Service Leadership III**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 170B. Includes practical training for fire service leadership and supervision. Also includes situational leadership, delegation, coaching, and discipline.

*Prerequisite(s):* FSC 149.

*Information:* This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III. *Information:* FSC 170A, 170B, and 170C together constitute FSC 170.

**FSC 173 Records and Reports**

.25-1 credit hour, .25-1 periods (.25-1 lec.)

Introduction to the elements and qualities of good report writing and comprehensive documentation. Includes form, style, and methodologies for writing various reports, techniques for developing an accurate narrative, and proper and improper conclusions. Also includes effective and correct use of grammar and the mechanics of writing.

*Prerequisite(s):* FSC 149.

**FSC 174 Fire Investigation I**

3 credit hours, 3 periods (3 lec.)

Introduction to fundamental concepts of fire scene investigation. Includes emergency responder responsibilities and observations, conducting origin and cause interpretation, preservation of evidence and documentation, scene security, motives of the fire setter, and elements of fire dynamics.

*Prerequisite(s):* With a grade of C or better: FSC 101, 120 and 123

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 180 Driver Training for Fire Service**

3 credit hours, 3 periods (3 lec.)

Techniques for driving and handling fire vehicles. Includes safe operating procedures, defensive driving, apparatus inspection, training in emergency maneuvers, and the key components of the driving system.

*Prerequisite(s):* FSC 149, 150 and 151.

*Information:* Consent of instructor is required before enrolling in this course.

**FSC 189 Current Issues in Fire Science**

2 credit hours, 2 periods (2 lec.)

Study of current issues in the fire service. Includes developing and writing an independent, applied research project, utilizing various computer applications for formatting and design, and use of the Internet and library resources.

*Prerequisite(s):* WRT 101 and 102.

*Information:* Completion of twenty credits in FSC prefix courses is required before enrolling in this course.

**FSC 230 Fire Investigation II**

3 credit hours, 3 periods (3 lec.)

Continuation of FSC 174. Principles and advanced concepts of fire investigation. Includes rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation, and courtroom testimony.

*Prerequisite(s):* FSC 174 with a C or better.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 249 Occupational Safety and Health for Emergency Services**

3 credit hours, 3 periods (3 lec.)

Concepts of occupational health and safety related to emergency service organizations. Includes risk and hazard evaluation, incident management, occupational health and safety, and control procedures for emergency service organizations.

*Prerequisite(s):* FSC 127 with a C or better.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 250 Principles of Fire and Emergency Services Administration**

3 credit hours, 3 periods (3 lec.)

Principles and concepts of administration for the fire and emergency services department. Includes relationship of government agencies to fire service, responsibility and authority, public policy, ethics, and leadership of the company officer.

*Prerequisite(s):* FSC 101 with a C or better.

*Information:* This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

**FSC 251 Hazardous Materials Chemistry**

3 credit hours, 3 periods (3 lec.)

Overview of the basic chemistry of hazardous materials. Includes recognition, identification, reactivity, and health hazards encountered by emergency services.

*Prerequisite(s): FSC 120 with a C grade or better.*

*Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.*

**FSC 252 Fire Service Strategy and Tactics**

3 credit hours, 3 periods (3 lec.)

Principles and tactics of fire service ground control. Includes fireground factors and management, command operations and functions, life safety, personnel, equipment, and extinguishing agents.

*Prerequisite(s): With a grade of C or better: FSC 120, 123 and 127.*

*Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.*

**FSC 253 Legal Aspects of Emergency Services**

3 credit hours, 3 periods (3 lec.)

Overview of the federal, state, and local laws that regulate emergency services. Includes a review of national standards, regulations, and consensus standards.

*Prerequisite(s): FSC 101 and 250 with a C grade or better.*

*Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.*

**FSC 260 Fire and Emergency Services Instructor**

2 credit hours, 2 periods (2 lec.)

Theoretical and practical training in developing and instructing fire and emergency services training programs. Includes an exploration of safety and legal issues, adult learning psychology, developing, planning and presenting effective instruction, evaluating student learning, teaching diverse learners, and use of instructional media.

*Prerequisite(s): FSC 189.*

*Information: Consent of instructor is required before enrolling in this course concurrently with FSC 189. Information: Meets the requirements for the Arizona State Fire Marshal Instructor I certification and NFPA 1041.*

**FSC 270 Leadership I for Fire Service Executives**

1 credit hour, 1 periods (1 lec.)

Concepts, techniques, and application of effective executive leadership. Includes leadership styles and characteristics, the effective executive, and leaders with vision, influence and motivation. Also includes being a change facilitator in a traditional organization, and the future of leadership.

*Prerequisite(s): FSC 170.*

**FSC 271 Leadership II for Fire Service Executives**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 270. Includes organizational structure, roles and responsibilities, and organizational values. Also includes organizational vision, fiscal management and priorities, innovative organizations, and executive leadership.

*Prerequisite(s): FSC 270.*

**FSC 272 Leadership III for Fire Service Executives**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 271. Includes communication skills, presentation skills, and verbal and writing skills at an executive level. Also includes interpersonal skills, labor relations, conflict management, ethical and unethical persuasion, and the media.

*Prerequisite(s): FSC 271.*

**FSC 273 Leadership IV for Fire Service Executives**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 272. Includes the local fire department in relation to its city government, local policy development. Also includes legal aspects of the city and department procedures, relationships with organized labor, networking and community relations, relations with local and state fire service providers, and understanding the national and international fire service.

*Prerequisite(s): FSC 272.*

**FSC 274 Leadership V for Fire Service Executives**

1 credit hour, 1 periods (1 lec.)

Continuation of FSC 273. Includes reasoning, thinking patterns, problem identification, and problem solving strategies. Also includes problem solving styles, decision-making models and approaches, personal decision making, and evaluation.

*Prerequisite(s): FSC 273.*

**FSC 280 Fire Chief Preparation**

4 credit hours, 4 periods (4 lec.)

Preparation for professional fire personnel to become chief officers. Includes incident command, communication, and disaster management.

## Fitness and Sport Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**FSS 155 Athletic-Academic Success**

2 credit hours, 2 periods (2 lec.)

Survey of successful educational strategies in support of individual academic plans, career goals, and personal decision making. Includes taking the first step, goals and time, creative thinking, memory, note-taking skills, disarm tests, and communicating. Also includes health and nutrition, diversity, and resources.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FSS 208 Professional Activities: Group Fitness**

2 credit hours, 3 periods (1 lec., 2 lab)

Gain knowledge necessary to prepare for a nationally accredited certification exam as a group fitness instructor. Includes introduction to group fitness class and to the certified group fitness instructor.

*Prerequisite(s):* Completion of or concurrent enrollment in: FSS 234 or both 234A or 234B.

*Recommendation:* Completion of WRT 090 or 096 or placement into WRT 101 on the writing assessment. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

**FSS 218 Professional Activities: Weight Training**

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction to basic resistance training principles. Includes history, anatomy and physiology, biomechanics, weight training principles and concepts, program development, and assessment and programming.

*Prerequisite(s):* FSS 234A or 234B or concurrent enrollment.

*Recommendation:* Completion of WRT 090 or 096 or placement into WRT 101 on the writing assessment test before enrolling in this course.

*Information:* This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

**FSS 234 Fundamentals of Exercise Science**

4 credit hours, 4 periods (4 lec.)

Overview of various systems, reactions, and adaptations to exercise and movement. Includes muscular system and anatomy, nervous system, kinesiology, metabolism, principles of exercise training, adaptations to exercise training; and the cardiovascular, respiratory, and endocrine systems.

*Prerequisite(s):* REA 091 or placement into REA 112 on the reading assessment, and WRT 090 or 096 or placement into WRT 101 on the writing assessment.

*Recommendation:* Completion of BIO 160IN or BIO 201IN and 202IN is highly recommended before enrolling in this course.

*Information:* FSS 234A and 234B together constitute FSS 234.

**FSS 234A Fundamentals of Exercise Science: Module A**

2 credit hours, 2 periods (2 lec.)

Overview of various systems, reactions, and adaptations to exercise and movement. Includes muscular system and anatomy, nervous system, kinesiology, metabolism, and principles of exercise training.

*Prerequisite(s):* REA 091 or placement into REA 112 on the reading assessment, and WRT 090 or 096 or placement into WRT 101 on the writing assessment.

*Recommendation:* Completion of BIO 160IN or BIO 201IN and 202IN is highly recommended before enrolling in this course.

*Information:* FSS 234A and 234B together constitute FSS 234.

**FSS 234B Fundamentals of Exercise Science: Module B**

2 credit hours, 2 periods (2 lec.)

Overview of various systems, reactions, and adaptations to exercise and movement. Includes exercise training, metabolism; and the cardiovascular, respiratory, and endocrine systems.

*Prerequisite(s):* REA 091 or placement into REA 112 on the reading assessment, and WRT 090 or 096 or placement into WRT 101 on the writing assessment.

*Recommendation:* Completion of BIO 160IN or BIO 201IN and 202IN is highly recommended before enrolling in this course.

*Information:* FSS 234A and 234B constitute FSS 234.

**FSS 236 Communication and Exercise Adherence**

2 credit hours, 2 periods (2 lec.)

Communication skills and interviewing techniques for personal trainers. Includes theories of motivation, the trans-theoretical model and stages of change, and communication techniques.

*Recommendation:* WRT 090 or 096 or placement into WRT 101 on the writing assessment test.

*Information:* This course is intended for the Fitness Professional program and continuing education for fitness professionals, coaches, and physical education teachers.

**FSS 238 Introduction to Sports Injury Management**

3 credit hours, 3 periods (3 lec.)

Introduction to principles and techniques of preventing, recognizing, treating, and rehabilitating sports related injuries. Includes overview of sports injury management, recognition of common sports injuries, taping/wrapping techniques, principles of rehabilitation, and event preparation and risk management.

*Recommendation:* WRT 090 or 096 or placement into WRT 101 on the writing assessment.

**FSS 241 Nutrition for Exercise and Sport**

3 credit hours, 3 periods (3 lec.)

Examination of the relationship between nutrition and the human body. Includes introduction to nutrition, food habits, food selection for optimal exercise performance, diet analysis, eating disorders, and application to the athlete.

*Recommendation:* Completion of MAT 086, REA 091, and WRT 090 or 096 or satisfactory score on the Mathematics, Reading, and Writing assessment tests.

*Information:* This course is intended for the Fitness Professional and professional development for coaches.

**FSS 260 Business Practices for the Personal Trainer**

2 credit hours, 2 periods (2 lec.)

Practices associated with employment, creating and managing a personal training business. Includes introduction to the fitness industry, creating your own personal training business, marketing and managing a personal training business; legal and professional responsibilities; and financing and accounting principles.

*Prerequisite(s):* WRT 090 or 096 or placement into WRT 101 on the writing assessment.

*Information:* This course is intended for the Fitness Professional program and continuing education for fitness professionals, coaches, and physical education teachers.

**FSS 262 Personal Trainer: Special Populations**

2 credit hours, 3 periods (1 lec., 2 lab)

Exercise management for persons with chronic diseases. Includes medical model health appraisal, allied health profession referrals, chronic disease and disabilities, and functional exercise adaptations.

*Recommendation:* FSS 218 and 276.

*Information:* This course is intended for students in the Fitness Professional Certificate program or for current physical education teachers or healthcare providers for continuing education credit. Students who are not currently certified as personal trainers must be in the second or later semester of the certificate program before enrolling in this course.

**FSS 271 Sport Psychology**

3 credit hours, 3 periods (3 lec.)

Development of the basics of sport psychology. Includes psychological perspective, psychology skills for coaches, psychological skills for athletes, and implementing skills training.

*Recommendation:* WRT 090 or 096 or placement into WRT 101 on the writing assessment.

*Information:* This course is intended for the Coaching Certificate program and continuing education for fitness professionals, coaches, and physical education teachers.



**FSS 272 Coach Techniques/Practices**

3 credit hours, 3 periods (3 lec.)

Coaching Techniques and Practices Concepts and strategies for teaching athletes both new skills and fine tuning of existing skills. Includes preparing to teach skills; presenting, developing, and maintaining skills; and cognitive processes involved in skills.

*Prerequisite(s):* WRT 090 or 096 or satisfactory score on the writing assessment test.

*Information:* Appropriate for coaches of athletes of all ages and skill levels.

**FSS 273 Sport Physiology**

3 credit hours, 3 periods (3 lec.)

Principles of fitness training for peak performance. Includes sport physiology and the athlete, training for muscular and energy fitness, and designing training programs.

*Recommendation:* WRT 090 or 096 or placement into WRT 101 on the writing assessment test.

*Information:* This course is intended for the Coaching Certificate program and continuing education for fitness professionals, coaches, and physical education teachers.

**FSS 276 Personal Trainer: Muscular Strength, Endurance, Flexibility**

3 credit hours, 4 periods (2 lec., 2 lab)

Assessment and interpretation of results for individualized programs designed for muscular strength, endurance and flexibility. Includes pre-activity screening, assessment, interpretation of results, manipulative variables in program design, and concept of periodization.

*Prerequisite(s):* Completion of or concurrent enrollment in: FSS 234 or 234A or 234B.

*Recommendation:* Completion of REA 091 or placement into REA 112 on the reading assessment test, and WRT 090 or 096 or placement into WRT 101 on the writing assessment test before enrolling in this course. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

**FSS 277 Personal Trainer: Cardiovascular Endurance/Body Composition**

3 credit hours, 4 periods (2 lec., 2 lab)

Assessment and program development for cardiovascular training, and skill development of body composition assessment techniques. Includes assessment issues, development of SMART (Specific/Measurable/Action-Oriented/Realistic/Time Bound) goals, program development, special considerations, and body composition.

*Prerequisite(s):* Completion of or concurrent enrollment in: FSS 234 or 234A or 234B.

*Recommendation:* Completion of REA 091 or placement into REA 112 on the reading assessment test, and WRT 090 or 096 (or placement into WRT 101 on the writing assessment test) before enrolling in this course. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

*Information:* This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

**FSS 280 Lifestyle and Weight Management Consultant**

1 credit hour, 1 periods (1 lec.)

Emphasis on evaluating fad diets, educating clients on proven techniques for weight loss (diet and exercise), and supporting clients with specific activities at various stages of change. Includes the trans-theoretical model, basic nutritional guidelines, exercise/activity guidelines and safety precautions, and developing personal strategies.

*Recommendation:* FSS 236 or concurrent enrollment.

*Information:* This course is intended for the Fitness Professional program and continuing education for fitness professionals, coaches, and physical education teachers. Students must complete a Nutrition course at the 100 level or higher prior to, or concurrently with this course.

**FSS 281 Personal Trainer Exam Preparation**

1 credit hour, 1 periods (1 lec.)

Summation of the curriculum presented in the Fitness Professional Certificate program. Includes exam content areas, study strategies, and test taking strategies to prepare for a nationally recognized certificate examination for personal trainers.

*Prerequisite(s):* Successful completion of or current enrollment in FSS 208, 218, 234, 276, and 277.

*Information:* Prerequisites may be waived with consent of instructor.

**FSS 285 Principles of Athletic Coaching**

3 credit hours, 3 periods (3 lec.)

Introduction to the principles of athletic coaching. Includes principles of behavior, teaching, exercise training, and management.

*Recommendation:* WRT 090 or 096 or placement into WRT 101 on the writing assessment.

**FSS 291 Fitness and Sport Sciences Internship**

3-4 credit hours, 7-10 periods (1 lec., 6-9 lab)

Volunteer fitness professional field experience at an approved work site. Includes communication in the fitness facility, positive work attitudes and practices, fitness professional ethics, fitness professional systems, and professional development. Also includes employment strategies, final evaluation, employment interview, and fitness professional field experience.

*Prerequisite(s):* FSS 208, 218, 234 (or 234A and 234B), 236, 276, and 277 or concurrent enrollment.

*Information:* May be taken concurrently with above prerequisites in the last semester. Designed for students in their final semester of course work in the Fitness Professional Certificate program. This course requires approximately 90 hours of supervised internship time at two or more facilities, in addition to weekly one hour lecture periods.

**FSS 296 Independent Study in Fitness and Sport Sciences**

1-4 credit hours, 1-4 periods (1-4 lec.)

Students independently continue their academic development in health, physical education, recreation, coaching, dance or fitness, with the help of faculty member.

*Information:* May be taken two times for a maximum of eight credit hours. Consent of instructor is required before enrolling in this course.

**FSS 299 Co-op: Fitness Professional**

1 credit hour, 1 periods (1 lec.)

Introduction to Cooperative Education which provides for success in securing and retaining a job related to subject area. Includes communication skills, time and energy management, stress and its management, and careers. Also includes placing yourself on the job market, principles, theories, and practices in the career field, and problems in the work situation.

*Corequisite(s):* FSS 299WK

*Information:* May be taken two times for a maximum of two credit hours. This course is intended for the Fitness Professional program and may be taken in the 2nd semester or later upon satisfactory completion of either FSS 276 or FSS 277.

**FSS 299WK Co-op Work: Fitness Professional**

2 credit hours, 10 periods (10 lab)

A supervised cooperative work program for students in an occupation related area. Teacher-coordinators work with students and their supervisors.

*Corequisite(s):* FSS 299

*Information:* May be taken two times for a maximum of four credit hours. This course is intended for the Fitness Professional program and may be taken in the 2nd semester or later upon satisfactory completion of either FSS 276 or FSS 277.

## Fitness and Wellness

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**FAW 104F1 Conditioning: For Physically Demanding Jobs**

1 credit hour, 2 periods (2 lab)

Total body conditioning designed to prepare or enhance fitness required for physically demanding professions such as law enforcement, fire-fighting, or the military. Includes personal safety and preparation, fitness assessments and goal setting, strength and conditioning, and reassessment.

*Information:* This course is intended for individuals who are preparing for a job related physical fitness test or who have physically demanding jobs. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 104F2 Conditioning: Speed, Agility, and Quickness**

1 credit hour, 2 periods (2 lab)

Total body conditioning designed to enhance sport-related fitness for athletes or fitness enthusiasts. Includes personal safety and preparation, fitness assessments and goal setting, and conditioning.

*Information:* May be taken two times for a maximum of two credit hours. This course is intended for individuals who have been participating in regular conditioning or sport activities.

**FAW 106F2 Individual Fitness: Running**

1 credit hour, 2 periods (2 lab)

Cardiovascular conditioning through running and walk/run workouts intended for the beginning and intermediate runner. Includes an introduction to running, components of training, heart rate zone training, the distances, running health and safety, and designing your training program. Also includes stride technique, proper alignment, cardiovascular fitness assessment, goal setting, and workout types for specific goals and distances.

*Information:* May be taken two times for a maximum of two credit hours. This course is suitable for students who wish to run a few miles a week to those training for distances up to a marathon.

**FAW 106F3 Individual Fitness: Swimming**

1 credit hour, 2 periods (2 lab)

Cardiovascular conditioning through lap swimming. Includes essential water and personal safety, basic stroke review, techniques of endurance swimming, and personal fitness assessment and activity modifications.

*Information:* May be taken two times for a maximum of two credit hours. This course is not suitable for students with a fear of water or who do not have some initial swimming skill.

**FAW 106F4 Individual Fitness: Walking**

1 credit hour, 2 periods (2 lab)

Cardiovascular conditioning, improved fitness, and weight management through various walking workouts. Includes introduction to walking, components of training, heart rate zone training, common faults, walking health and personal safety, designing your training program, and race walking techniques. Also includes stride technique, proper alignment, cardiovascular fitness assessment, goal setting, and workout types for specific goals and distances.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 110F1 Weight Training and Cardiovascular Fitness Level I**

1 credit hour, 2 periods (2 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training. Includes orientation to the fitness facility, personal fitness assessment and activity modifications, and principles of basic program design.

*Information:* May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. This course is appropriate for students desiring to improve either health fitness or athletic performance and may NOT be taken concurrently with FAW 110F2 or FAW 110F3.

**FAW 110F2 Weight Training and Cardiovascular Fitness Level II**

2 credit hours, 4 periods (4 lab)

A personalized fitness program using resistance, cardiovascular, and flexibility training. Includes review procedures of the fitness facility, personal fitness assessment and activity modifications, and principles of basic program design.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. This course is appropriate for students desiring to improve either health fitness or athletic performance and may NOT be taken concurrently with FAW 110F1 or FAW 110F3. This course requires twice the time commitment in lab hours as FAW 110F1.

**FAW 110F3 Weight Training and Cardiovascular Fitness Level III**

2 credit hours, 4 periods (4 lab)

Continuation of FAW 110F1 or FAW 110F2. Includes reviewing procedures of the fitness facility, personal fitness assessment and activity modifications, principles of program design, and written assignments.

*Prerequisite(s):* FAW 110F1 or FAW 110F2.

*Information:* May be taken two times for a maximum of four credit hours. This course is appropriate for students desiring to improve either health fitness or athletic performance and may NOT be taken concurrently with FAW 110F1 or FAW 110F2. Prerequisites may be waived with consent of instructor. This course requires the same time commitment in lab hours as FAW 110F2 but includes written assignments.

**FAW 112F1 Ballroom/Latin Dance**

1 credit hour, 2 periods (2 lab)

Introduction to ballroom and Latin dancing. Includes key components of each dance, floorwork/locomotor skills, dancing as a total activity, personal fitness assessment and activity modifications, and evaluation.

*Information:* Traditional ballroom dances covered are the six majors: Foxtrot, Waltz, East Coast Swing, Tango, Cha Cha, and Rumba. Other popular social dances that may be covered are the Salsa/Mambo, Night Club Two Step, and West Coast Swing. This course is intended for recreational ballroom dance and will not be accepted for the Associate of Fine Arts Dance Concentration. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 113F1 Belly Dance**

1 credit hour, 2 periods (2 lab)

Introduction to Egyptian, Turkish, and American belly dance with emphasis on foot placement and efficient execution of basic skills. Includes key components of belly dance, class protocol, dancing as a total activity, personal fitness assessment and activity modifications, and evaluation of basic belly dance skills.

*Information: This course is intended for recreational belly dance and will not be accepted for the Associate of Fine Arts Dance Concentration. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**FAW 123F1 Salsa/Latin Dance**

1 credit hour, 2 periods (2 lab)

Introduction to salsa and other Latin dances with emphasis on basic steps, turns, and techniques to build confidence for dancing socially. Includes key components of each dance, floorwork and locomotor skills, and personal fitness assessment and activity modifications.

*Information: This course is intended for recreational salsa dance and will not be accepted for the Associate of Fine Arts Dance Concentration. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**FAW 128F3 Cardio Cross-Training**

1 credit hour, 2 periods (2 lab)

Cardiovascular and muscular exercises generally set to music and performed rhythmically. Includes personal safety and preparation, personal fitness assessment and activity modifications, rhythmic cardio routines, and interval training.

*Information: This course will utilize a variety of cardiovascular training modalities which may include floor exercise, steps, and interval training. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**FAW 128F6 Cardio Step**

1 credit hour, 2 periods (2 lab)

Cardiovascular and muscular exercises set to music, performed rhythmically using basic to complex stepping patterns on the floor and on a raised platform. Includes personal safety and preparation, personal fitness assessment and activity modifications, and elements of rhythmic cardio routines.

*Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**FAW 129F3 Zumba®**

1 credit hour, 2 periods (2 lab)

Cardiovascular and muscular endurance exercises inspired by Latin dance and music using Zumba® techniques. Includes personal safety and preparation, personal fitness assessment and activity modifications, and elements of cardio routines.

*Information: May be taken two times for a maximum of two credit hours.*

**FAW 130 Boot Camp Style Circuit Training**

1 credit hour, 2 periods (2 lab)

Total body conditioning using various exercises, stations, and equipment which provides a cardiovascular challenge while emphasizing development of muscular strength and endurance. Includes personal safety and preparation, personal fitness assessment and activity modifications, and exercise techniques.

*Information: May be taken two times for a maximum of two credit hours.*

**FAW 131 Indoor Cycling**

1 credit hour, 2 periods (2 lab)

Cardiovascular conditioning set to music and performed on a stationary bicycle. Includes personal safety and preparation, key concepts, personal fitness assessment and activity modifications, and elements of indoor cycling training.

*Information: May be taken two times for a maximum of two credit hours.*

**FAW 132 Kickboxing**

1 credit hour, 2 periods (2 lab)

Total body conditioning using various kickboxing exercises, stations, and equipment that provide a cardiovascular challenge while emphasizing development of muscular strength and endurance through upper and lower body striking activities. Includes personal safety and preparation, personal fitness assessment and activity modifications, and kickboxing skill development.

*Information: May be taken two times for a maximum of two credit hours. Students are expected to provide their own bag gloves or hand wraps for contact with the bags and pads.*

**FAW 134F1 Pilates**

1 credit hour, 2 periods (2 lab)

Introduction to the six core principles of Pilates in individual exercises and sequences of movements. Includes key components of Pilates integrative practice, and personalizing one's practice. Also includes emphasis on total body conditioning to improve strength, flexibility, coordination, proper body alignment, breath control, and overall body awareness.

*Information:* This course does not use reformers and is primarily mat based. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 136 Stretch and Tone**

1 credit hour, 2 periods (2 lab)

Muscular strength, endurance, and flexibility exercises designed to improve total body fitness with exercises generally set to music. Includes personal safety and preparation, fitness assessment and activity modifications, and exercise techniques.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 138F1 Yoga**

1 credit hour, 2 periods (2 lab)

Introduction to stress reduction through yoga. Includes key components of yoga, essential movements and postures, mind-body practice, personalizing one's practice, and personal fitness assessment and activity modifications.

*Information:* There are many styles of yoga and the specific philosophy offered in a given section will reflect that of the instructor; however, this course is gentle to moderate intensity. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 148F1 Golf**

1 credit hour, 2 periods (2 lab)

Fundamentals of golf intended for the novice or player with limited experience. Includes key components of each shot, essentials for game play, game management, and personal fitness assessment.

*Information:* A required range and/or course fee will be payable to the golf course. May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 155F1 Tennis**

1 credit hour, 2 periods (2 lab)

Fundamentals of tennis intended for the novice or player with limited experience. Includes key components of tennis, fundamental stroke development, game management, and personal fitness assessment.

*Information:* May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 157F1 Aikido**

1 credit hour, 2 periods (2 lab)

Introduction to the fundamentals of Aikido. Includes key components of Aikido, physical and mental preparation, ukemi and basic stances, neutralizing attacks, and budo implements.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 158 Sports Officiating**

3 credit hours, 3 periods (3 lec.)

Familiarization with and application of the rules of various sports from the standpoint of the official. Includes introduction to the art of officiating, discussion of interpretation of rules for each sport, officiating duties, and guest officials and coaches from each sport. Also includes field experience at Pima team scrimmages.

*Recommendation:* WRT 090 or 096 or satisfactory score on the writing assessment test. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 163 Self Defense for Women**

1 credit hour, 2 periods (2 lab)

Introduction to the mental attitudes and physical skills needed to defend oneself against an attack. Includes knowing your surroundings, basic safety location techniques, and defensive physical skills.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 165 Tai-chi Chuan**

1 credit hour, 2 periods (2 lab)

Fundamentals of T'ai-chi chuan, a form of martial arts. Includes an introduction, principles, T'ai-chi for a healthier lifestyle, solo exercises, self-defense, and personal fitness assessment and activity modifications.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 166 Football**

1 credit hour, 2 periods (2 lab)

Fundamental football skills for the student athlete or recreational player. Includes key component of football, personal safety and preparation, individual skills, and team skills.

*Information:* May be taken two times for a maximum of two credit hours. If course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**FAW 167 Baseball**

1 credit hour, 2 periods (2 lab)

Fundamental baseball skills for the recreational player. Includes key components of baseball, individual skills, and team skills.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 168 Basketball**

1 credit hour, 2 periods (2 lab)

Fundamental basketball skills for the recreational player. Includes key components of basketball, personal safety and preparation, individual skills, and team skills.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 170 Soccer**

1 credit hour, 2 periods (2 lab)

Fundamental soccer skills for the recreational player. Includes key components of soccer, personal safety and preparation, individual skills, and team skills.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 173 Volleyball**

1 credit hour, 2 periods (2 lab)

Fundamental volleyball skills for the recreational player. Includes offensive and defensive systems and strategies, conditioning, and game play.

*Information:* May be taken two times for a maximum of two credit hours.

**FAW 182 Healthy Living and Wellness**

3 credit hours, 3 periods (3 lec.)

Promotion of self-awareness of our daily lifestyle choices which impact our health and well-being. Includes dynamic alignment training, postural assessment training, somatic training, wellness model, nutrition, relaxation techniques, and self-care techniques.

**FAW 183 Lifestyle Wellness Coaching**

2 credit hours, 2 periods (2 lec.)

Introduction to lifestyle wellness coaching and developing productive coaching techniques. Includes background and core ingredients of coaching, paths of change, flow model of coaching, setting the foundations for effective coaching, and the coaching relationship. Also includes the art of listening, the power of questioning, direct communication, awareness and action, and building enduring futures.

**FAW 184 Health, Wellness, and Physical Activity**

3 credit hours, 3 periods (3 lec.)

Development of skills for personal lifestyle changes that promote health, wellness, and fitness over a lifetime. Includes physical activity, special considerations, nutrition and body composition, and stress and health.



## Food Science and Nutrition

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### FSN 127HC Human Nutrition and Biology: Honors

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition. Also includes additional Honors content.

*Information:* Same as BIO 127HC. Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.

### FSN 127IN Human Nutrition and Biology

4 credit hours, 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously. Same as BIO 127IN.

### FSN 154 Nutrition

3 credit hours, 3 periods (3 lec.)

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet.

## French

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### FRE 101 Elementary French I

4 credit hours, 4 periods (4 lec.)

Introduction to French. Includes basic listening, reading, and writing skills and cultural and geographic awareness.

### FRE 102 Elementary French II

4 credit hours, 4 periods (4 lec.)

Continuation of FRE 101. Includes further development of oral and written forms, pronunciation, and additional grammatical structures, interpersonal transactions, and geographical and cultural distinctions. Also includes an emphasis on balancing more complex structures with active communication.

*Prerequisite(s):* FRE 101.

### FRE 201 Intermediate French I

4 credit hours, 4 periods (4 lec.)

Continuation of FRE 102. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and using a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking and listening.

*Prerequisite(s):* FRE 102.

*Information:* Prerequisite(s) may be waived with two years of high school French. *Information:* This course will be conducted primarily in French.

### FRE 202 Intermediate French II

4 credit hours, 4 periods (4 lec.)

Continuation of FRE 201. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking, and listening. Also includes reading selections from authentic media, advanced conversation and discussions, and compositions using intermediate grammar structures.

*Prerequisite(s):* FRE 201.

*Information:* This course will be conducted primarily in French.

**FRE 296 Independent Study in French**

1-4 credit hours, 1-4 periods (1-4 lec.)

Independent study in French literature, grammar, or special projects under the supervision of an instructor.

**Information:** Consent of instructor is required before enrolling in this course. **Information:** May be taken two times for a maximum of eight credit hours.

## Game Design

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**GAM 101 Game Design I**

4 credit hours, 4 periods (4 lec.)

Textual analysis of game play. Includes history of games, defining play, use of rules, impact of games on culture, psychological impact of games, and working in the game industry.

**GAM 102 Game Design II**

4 credit hours, 5 periods (3 lec., 2 lab)

Continuation of GAM 101. Includes the role of the game designer, structure of the game, formal and dramatic elements of the game, game play fun, and storyboard development.

**Prerequisite(s):** GAM 101.

**GAM 120 Introduction to Game Programming**

4 credit hours, 5 periods (3 lec., 2 lab)

Introduction to game engine programming. Includes Unity 3D game engine, JavaScript language features, input interaction, object-oriented JavaScript and ActionScript features, image maps, particle engine, and artificial intelligence techniques.

**Prerequisite(s):** GAM 101.

**Recommendation:** Previous or concurrent enrollment in MAT 145 (preferred) or MAT 142 (or higher).

**GAM 150 Game Programming I**

4 credit hours, 5 periods (3 lec., 2 lab)

Basic concepts of game programming using managed Direct X and C. Includes getting started with Direct 3D, Direct 3D devices, rendering, meshes, and creating a game.

**Prerequisite(s):** CIS142.

**GAM 151 Game Programming II**

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of GAM 150. Intermediate concepts of game programming using managed Direct X and C. Includes graphic concepts, High Level Shader, sound, and user input.

**Prerequisite(s):** GAM 150.

**GAM 201 Game Design III**

4 credit hours, 5 periods (3 lec., 2 lab)

Continuation of GAM 102. Includes conceptualizing a game; prototyping; playtesting; functionality, completeness, and balance, controls and interface; design team; and storyboarding.

**Prerequisite(s):** GAM 102 and 120.

**GAM 218 Game Design Portfolio Capstone**

4 credit hours, 5 periods (3 lec., 2 lab)

Production of a professional quality game design portfolio with a focus on a comprehensive capstone project. Includes production of a digital art portfolio, development of a game trailer, playable prototype, project management, current digital arts tools and processes, resumes and interviews, and presentation of a portfolio.

**Prerequisite(s):** GAM 120 and 201.

**GAM 296 Independent Study in Game Design**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed projects in game programming at the advanced level. Includes defining a project, tool and medium, conceptualize and execute a project, professional environment, and completing and critiquing the project.

**Recommendation:** Completion of CIS 142, CIS 278 and GAM 150 is highly recommended before enrolling in this course.

**Information:** May be taken four times for a maximum of sixteen credit hours.

## Gender and Women's Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### GWS 100 Introduction to Feminist Studies

3 credit hours, 3 periods (3 lec.)

Interdisciplinary survey and analysis of women's issues in structured inequalities and globalization. Includes feminist studies: study of gender, culture, and society; theoretical approaches to gender; learning gender socialization; contemporary feminist issues: socialization, work, and family; body and health issues; gender issues and intimacy; gender and the economy; gender, politics, government, and the military; gender, education, creativity, and language; and gender and spirituality.

### GWS 201 La Chicana

3 credit hours, 3 periods (3 lec.)

Interdisciplinary analysis of Chicanas/Mexicanas' status in the United States. Includes Chicana/Mexicana scholarship and Social Justice Movements, and Chicana/Mexicana feminism in the Southwest, Chicana/Mexicana community empowerment, Chicanas/Mexicanas on the U.S.-Mexico border.

*Information: Same as MAS 201.*

### GWS 202 Sexuality, Gender and Culture

3 credit hours, 3 periods (3 lec.)

Anthropological examination of gender identity, roles, relations, and variation. Includes theories and methods of the anthropology of sex and gender, historical origins and development of the sub-discipline, and sex, gender and sexuality in cross-cultural, ethnographic perspective. Also includes selected case studies and cross-cultural frameworks for analysis.

*Information: same as ANT 202.*

### GWS 280 Feminist Research Methods

3 credit hours, 3 periods (3 lec.)

Introduces research methods applied in contemporary feminist research. Includes introduction to feminist research, research methods, methodologies, and epistemology, feminist construction of knowledge, feminist research as Theory in Action, qualitative research methods/cross-cultural approaches, feminist research issues of power, academic visibility, empowerment, ethics, social justice and agency, and implications of feminist research.

## General Technical Writing

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### GTW 101 Writing for Trades and Technical Occupations

3 credit hours, 3 periods (3 lec.)

Applied technical reading and writing components necessary for trade and industrial occupations. Includes review of grammar; spelling and sentence building basics; reading trade and technical texts critically; and practical application of writing including writing for clarity, accuracy and professionalism as they relate to job functions, occupational requirements and effective communications across trades.

*Prerequisite(s): WRT 070 or 075 with a C or better, or required score on the writing assessment test for WRT 090.*

## General Technologies Mathematics

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### GTM 105 Applied Technical Mathematics

3 credit hours, 3 periods (3 lec.)

Applied geometry and trigonometry operations. Includes review of basic math operations, review of pre-algebra, elements of geometry, plane trigonometry, and practical applications.

*Prerequisite(s): With a grade of C or better: ICS 081 or MAT 086 or completion of module 15 in MAT 089A or satisfactory score on the Mathematics assessment test.*

**GTM 105V Applied Technical Mathematics for Aviation**

3 credit hours, 3 periods (3 lec.)

Applied geometry and trigonometry operations. Includes review of basic math operations, review of pre-algebra, elements of geometry, plane trigonometry, and aviation practical applications.

*Prerequisite(s):* With a grade of C or better: ICS 081 or MAT 086 or completion of Module 15 in MAT 089A or satisfactory score on the Mathematics assessment test.

## Geography

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**GEO 101 Physical Geography: Weather and Climate**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the physical elements. Includes earth-sun relationships, atmospheric processes, global heat balance, global pressure and temperature patterns, annual weather and climate patterns, weather and air pollution, urban influences on weather and climate, and climatic change. Also includes weather and people, wave cyclones of middle latitudes, weather maps and weather prediction, basic ecological principles, and energy.

**GEO 102 Physical Geography: Land Forms and Oceans**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the surface of the earth and the forces of nature that shape it. Includes continental drift and plate tectonics, geomorphic processes, the hydrologic cycle, pollution esthetics of landforms, recreation and other utilization, and map reading and interpretation.

**GEO 103 Cultural Geography**

3 credit hours, 3 periods (3 lec.)

Examination of the human world from a geographic perspective. Includes geography as a discipline, culture and human geography, the changing Earth, descriptive fundamentals of population geography, migration, and geography of language and religion. Also includes rural traditions and livelihoods, urban geography, economic changes and industrialization, as well as political and medical geography.

**GEO 104 World Regional Geography**

3 credit hours, 3 periods (3 lec.)

Geographic concepts and information organized by conventional regions and nations. Includes geographic perspectives on the physical environment, and aspects of culture such as: population, language, religion, political systems, economic development, health, and history.

**GEO 265 Mapping Concepts**

1 credit hour, 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

*Information:* Same as ANT/ARC/GIS 265.

**GEO 267 Introduction to Geographic Information Systems**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems. Includes the evolution of technology, system components, database concepts, applications, and implementation.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Basic computer skills are required before enrolling in this course. *Information:* Same as ANT/ARC/GIS 267.

**GEO 296 Independent Studies in Geography**

.5-6 credit hours, 1-12 periods (.25-3 lec., .75-9 lab)

Students independently continue their studies in Geography under the supervision of a faculty member.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of six credit hours.

## Geology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### GLG 101IN Physical Geology

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the physical aspects of the Earth's crust. Includes scientific measurements, maps, and the scientific method; hands-on identification and assessment of rocks and minerals; and introduction to geology, earth composition, surface processes, subsurface processes, investigative tools, geologic structures, geologic resources, and earth history. Also includes a field trip to observe and interpret geologic processes in a natural setting.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

### GLG 102IN Historical Geology

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the physical, chemical, and biological history of the Earth, including hands-on identification and classification of major fossil groups according to their phyla, ages, and ecosystems. Includes scientific measurements, maps, scientific method, history of historical geology (Uniformitarianism, Catastrophism); identification and interpretation of rocks and sedimentary textures, environments, and structures; geologic time, the evolution of life, planetary evolution, plate tectonics, evolution of the Earth's surface (including the physical environments, resources, and life of the Precambrian, Paleozoic, Mesozoic, and Cenozoic); and human evolution and human impacts. Also includes a field trip to observe rocks and structures and interpret geologic history and fossils in a natural outdoor setting.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

### GLG 110IN Geological Disasters and Environmental Geology

4 credit hours, 6 periods (3 lec., 3 lab)

Survey of geologic processes with respect to the interactions between humans and the Earth. Includes identifying geologic hazards, understanding the challenges of predicting and preventing natural disasters, and mitigating and preventing pollution; the relationship of natural resources to population distribution, resource usage and impacts, and waste management and pollution prevention; and the hydrologic cycle, plate tectonics, volcanoes, earthquakes, and catastrophic events, such as floods, fires, landslides, earthquakes, and volcanic action. Also includes water quality, resource availability, toxic and radioactive waste disposal problems and proposed solutions, global climate change, sea level rise, greenhouse gases, and extreme weather. Also includes a field trip to investigate local geologic hazards.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

### GLG 296 Independent Studies in Geology

.5-3 credit hours, 1.5-9 periods (1.5-9 lab)

Independent studies, projects, and/or laboratory exercises in geology. Content to be determined by conference between student and instructor.

*Information: Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of nine credit hours.*

## Geospatial Information Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### GIS 181 Global Positioning Systems Basics

1 credit hour, 1 periods (1 lec.)

Introduction to the use of Global Positioning Systems (GPS) receivers in a field setting for non-technical applications. Includes GPS vocabulary, operation, field data collection and data transfer. Also includes using equipment, resources and facilities of the Archaeology Centre.

*Information: Same as ANT/ARC 181.*

### GIS 265 Mapping Concepts

1 credit hour, 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

*Information: Same as ANT/ARC/GEO 265.*

**GIS 267 Introduction to Geographic Information Systems**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems (GIS). Includes the evolution of the technology, applications, benefits and costs, characteristics of geographic data, data types, database concepts, and operations and functionality. Also includes hardware, software, implementation, legal issues, and the future of geographic information systems.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Prerequisite may be waived with consent of instructor. Basic computer skills are required before enrolling in this course. Same as ANT/ARC/GEO 267.

**GIS 281 Global Positioning Systems**

1 credit hour, 3 periods (3 lab)

Introduction to the technical use of Global Positioning Systems (GPS) receivers in a field setting. Includes review of GPS vocabulary and concepts, comprehensive initialization of hand-held GPS receivers, data collection with hand-held GPS, the use of mapping software with data from hand-held GPS, concepts of differential GPS, operation of and field data collection with static and RTK precision GPS, use of software packages for differential correction and map production. Also includes using equipment, resources and facilities of the Archaeology Centre.

*Prerequisite(s):* ANT/ARC/GIS 181

*Information:* Prerequisite(s) may be waived with equivalent experience or consent of instructor. Same as ANT/ARC 281

**GIS 284 Computer Cartography and CAD**

3 credit hours, 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to: methods and techniques, and application projects.

*Prerequisite(s):* ANT/ARC/GEO/GIS 265 or concurrent enrollment.

*Information:* Same as ANT/ARC 284.

**GIS 286 Electronic and Digital Field Mapping**

4 credit hours, 8 periods (2 lec., 6 lab)

Overview of the creation of electronic and digital maps in a field setting. Includes an introduction to instrument operation, field data, producing maps, and computer applications.

*Prerequisite(s):* ANT/ARC 265 and ANT/ARC/GIS 281.

*Recommendation:* Consult instructor for alternative prerequisite(s).

*Information:* Same as ANT/ARC 286.

## German

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**GER 101 Elementary German I**

4 credit hours, 4 periods (4 lec.)

Introduction to German. Includes basic listening, reading, and writing skills, and cultural and geographic awareness.

**GER 102 Elementary German II**

4 credit hours, 4 periods (4 lec.)

Continuation of GER 101. Includes further development of oral and written forms, pronunciation, and additional grammatical structures, interpersonal transactions, and geographical and cultural distinctions. Also includes an emphasis on balancing more complex structures with active communication.

*Prerequisite(s):* GER 101.

**GER 201 Intermediate German I**

4 credit hours, 4 periods (4 lec.)

Continuation of GER 102. Includes an intensive review of grammar, pronunciation, communication, advanced grammar, readings of selected authors, and German culture.

*Prerequisite(s):* GER 102.

*Information:* Two years of high school German may fulfill prerequisite.



**GER 202 Intermediate German II**

4 credit hours, 4 periods (4 lec.)

Continuation of GER 201. Includes pronunciation, communication, advanced grammar, and German culture.

*Prerequisite(s):* GER 201.

**GER 296 Independent Study in German**

1-4 credit hours, 3-12 periods (3-12 lab)

Independent study in German literature, or special projects under the supervision of an instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken two times for a maximum of eight credit hours.

## Global Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**GLS 110 Introduction to Cities and Global Society**

3 credit hours, 3 periods (3 lec.)

Introduction to the study of the urban environment. Includes exploring the city, city form and city culture, urban diversity, and urban and global dilemmas and possible solutions. Also includes a special emphasis on understanding cities and the impact of globalization at community, national, and international levels.

*Information:* Same as SOC 110.

## Health Care

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**HCA 103 Orientation to Pharmacology**

3 credit hours, 3 periods (3 lec.)

An overview of the principles of pharmacology for professional allied health care providers. Includes medication sources, classifications and actions, oversight by the government, administration, and safety precautions. Also includes standard mathematical formulas for converting among measuring systems to assure accuracy in medication dosage and preparation.

**HCA 119 Orientation to Human Anatomy and Physiology**

3 credit hours, 3 periods (3 lec.)

Orientation to basic anatomy and physiology appropriate for the health care setting. Includes structural organization of the human body, body systems, major organs, and common pathology. Also includes CLIA waived testing and analysis used to determine common disease.

**HCA 152 Advanced Cardiac Life Support**

2 credit hours, 2 periods (2 lec.)

Evaluation and management of patients in pre-arrest and cardiac arrest as required by guidelines of the American Heart Association. Includes advanced cardiac life support (ACLS) overview, review of prerequisite material, case overview, discussion, and demonstration of appropriate treatment for various cardiac emergencies, and practical examination of knowledge and skills.

*Information:* Provides the didactic portion and the competency skill stations required by the American Heart Associate (AHA) course in Advanced Cardiac Life Support (ACLS). Healthcare provider basic life support (BLS) card is required at the beginning of the class. This course is designed for students enrolled in the PCC Respiratory Care program. Students must have completed the first year of the Respiratory Care program before enrolling in this course.

**HCA 154 Introduction to Health Care Delivery**

3 credit hours, 3 periods (3 lec.)

Overview of the health care field. Includes health care delivery systems, medical terminology, ethics and professionalism, patient rights and responsibilities; communication; basic patient assessment; and workplace and personal safety.

## Health Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### HED 136 Introduction to Health Sciences

3 credit hours, 3 periods (3 lec.)

Contemporary health-related issues for all dimensions of the individual. Includes understanding health for ourselves and others, a lifetime of wellness, responsible sexuality, and avoiding harmful habits.

### HED 140 First Aid and Cardiopulmonary Resuscitation

1 credit hour, 1 periods (1 lec.)

Theory and practice for treatment of infants, children, and adults. Includes standard first aid and cardiopulmonary resuscitation (CPR).

## Health Information Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### HIT 100 Introduction to Health Information Management

3 credit hours, 3 periods (3 lec.)

An overview of health care delivery systems and mechanisms in the U.S. Includes the medical model of healthcare and delivery, public policy, healthcare finance and regulation, data content structures and standards, information protection, informatics, and the role of leadership.

### HIT 101 Introduction to ICD Coding

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to principles and application of the International Classification of Disease (ICD) coding system. Includes overview of coding, introduction to ICD 10th Revision Clinical Modifications/Procedural Coding System (10-CM/PCS). Includes coding conventions, coding guidelines, hospital inpatient, outpatient and physician office coding, and overview of HCPCS.

*Recommendation:* HIT 105 and BIO160IN.

### HIT 102 CPT Coding

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to principles and application of Current Procedural Terminology (CPT) Coding System. Includes overview of CPT and CPT coding. Also includes the following CPT sections: Anesthesia, Evaluation and Management, Medicine, Radiology, Surgery, and Pathology and Laboratory.

*Recommendation:* Completion of HIT 105 and BIO 160IN.

### HIT 105 Medical Terminology

3 credit hours, 3 periods (3 lec.)

Terminology used in the medical field. Includes word parts and forms, terms pertaining to the body as a whole, anatomy and structural organization of the body. Also includes terminology of body systems, organs and function including disease processes and symptoms, laboratory tests, clinical procedures and use of medical dictionaries and other resource materials for research and practice.

### HIT 108 Health Information Employment Policies

1 credit hour, 2.5 periods (.5 lec., 2 lab)

Prepares students for employment in Health Information Technology. Includes employer requirements for CPR training, employment resources, resume development, Privacy and Security, immunizations and the criminal background check.

### HIT 112 Health Insurance and Medical Billing

3 credit hours, 3 periods (3 lec.)

Overview and principles of the basics of health insurance and medical billing. Includes principles of health insurance and medical billing, health insurance contracts, claims process, insurance terminology, abbreviations, and symbols. Also includes diagnostic and procedural coding (with emphasis on medical terminology, anatomy and physiology), client eligibility and reimbursement processes, health care statistics, and supervision and management.

*Prerequisite(s):* HIT 101 and 102.

*Recommendation:* Completion of HIT 100 and 105 are recommended before enrolling in the course.

**HIT 125 Pathophysiology and Pharmacology for HIT**

3 credit hours, 4 periods (2 lec., 2 lab)

Principals of pharmacology and pathophysiology. Includes disease processes according to body system, causes, diagnosis and treatment with emphasis on drug actions and classifications. Includes pharmacotherapy and laboratory findings; basic concepts in pharmacology, pharmacokinetics, dosage calculations, and pharmacology as applied to disease and conditions distinct to each body system.

**HIT 150 Introduction to Health Management Information Systems**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to Health Information Management Systems (HIMS). Includes overview of electronic health record, software, administrative management, scheduling and patient management, HIPAA, and HIM roles and functions. Also includes clinical inputs and outputs; coding; billing and reimbursement; clinical decision support systems and quality improvement; personal health records; patient portals; and HIMS adoption and implementation.

**HIT 175 Health Information Statistics and Research**

3 credit hours, 4 periods (2 lec., 2 lab)

Principles of health information statistics and research. Includes a statistical approach to healthcare, sources of data collection, data sources and databases. Also includes health care research processes and strategies, project development, data collection, design and analysis, report structure and presentation.

**HIT 201 Advanced ICD Coding**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced use of references and source documents for outpatient and inpatient hospital coding. Includes interpretation of International Classification Diseases (ICD), Clinical Modification (CM), and Procedural Coding System (PCS) guidelines relative to application of inpatient and outpatient diagnostic and procedural codes.

*Prerequisite(s): HIT 101 and 102.*

**HIT 202 Advanced Classification Systems Applications**

3 credit hours, 5 periods (2 lec., 3 lab)

Advanced application and demonstration of coding skills. Includes use of references and source documents for International Classification of Diseases Clinical Modification and Procedural Coding System (ICD-CM and PCS), Current Procedural Terminology (CPT) coding and evaluation, Uniform Hospital Discharge Data Set (UHDDS), and Diagnostic-Related Group (DRG) guidelines and regulations.

*Prerequisite(s): HIT 101 and HIT 102.*

**HIT 210 Medical Quality Assurance and Supervision**

3 credit hours, 3 periods (3 lec.)

Principles of medical quality assurance and supervision. Includes health information management skills and human resource roles and responsibilities. Also includes HIPAA regulations, accreditation and licensure, organizational models, technologies and planning for a professional career in health care.

*Prerequisite(s): HIT 100 and 105.*

**HIT 211 Medicolegal Aspects in Health Information Management**

3 credit hours, 3 periods (3 lec.)

Regulatory requirements in health care and application of general principles of law in health information management and legal proceedings. Includes American legal system, court systems and legal procedures, principles of liability, patient record requirements, access to health information, patient rights and confidentiality. Also includes judicial process of health information, specialized patient records, risk management and quality management, HIV information, computerized patient records, health care fraud and abuse, and ethics.

*Prerequisite(s): HIT 100 and 105.*

**HIT 225 Advanced Health Management Information Systems**

3 credit hours, 5 periods (2 lec., 3 lab)

Applied concepts in Health Information Management (HIM) Systems. Includes the evolution of healthcare legislation and standards; and health records content and documentation. Also includes electronic health record system legislation and implementation; and health information technologies and data analytics.

*Prerequisite(s): HIT 150.*

**HIT 290 Health Information Technology Internship**

4.5 credit hours, 12.5 periods (.5 lec., 12 lab)

Health Information Technology Professional Practice experience (PPE) includes meaningful engagement within the healthcare industry through an approved work site or project-based study. Includes HIT skills development, professional networking and communications, goal setting, employment strategies, values and ethics, and use of health information systems and resources.

*Prerequisite(s):* HIT 105 and 108.

*Information:* Consent of instructor is required before enrolling in this course. Designed for students in their final semester of course work in the Health Information Technology option. Students complete 180 clock hours of supervised placement at approved work site (or project-based study).

## History

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**HIS 101 Introduction to Western Civilization I**

3 credit hours, 3 periods (3 lec.)

Pre-history to the Wars of Religion, a period extending from 10,000 BCE to 1648 CE. Includes transition from pre-historic to the historic period, Greco-Roman world, Early, Central, and Late Middle Ages, and Renaissance and Reformation.

**HIS 101HC Introduction to Western Civilization I: Honors**

3 credit hours, 3 periods (3 lec.)

Pre-history to the Wars of Religion, a period extending from 10,000 BCE to 1648 CE. Includes transition from pre-historic to the historic period, Greco-Roman world, Early, Central, and Late Middle Ages, and Renaissance and Reformation. Also includes Honors content.

*Prerequisite(s):* Must qualify for Honors program.

*Information:* Faculty or Advisor approval is required before enrolling in this course. Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a publishable quality peer reviewed paper or project in a format appropriate for the discipline; and presentation of research, in class or to a wider audience.

**HIS 102 Introduction to Western Civilization II**

3 credit hours, 3 periods (3 lec.)

History of the origins and development of the modern Western world. Includes Wars of Religion, the Enlightenment, the Eighteenth century, the Nineteenth century, and the Twentieth century.

**HIS 102HC Introduction to Western Civilization II: Honors**

3 credit hours, 3 periods (3 lec.)

History of the origins and development of the modern Western world. Includes Wars of Religion, the Enlightenment, the Eighteenth century, the Nineteenth century, and the Twentieth century. Also includes additional Honors content.

*Information:* Must qualify for the Honors program. Instructor or advisor/counselor approval may be required registering for this course. Honors Content may include: Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**HIS 105 Introduction to Chicano Studies**

3 credit hours, 3 periods (3 lec.)

Chicano(a) life in historical context since 1848. Includes defining Chicano(a) ideologies and realities from an interdisciplinary perspective. Also includes Chicano(a) history and culture within the world systems of Native Americans, New Spain, Mexico and the United States.

*Information:* Same as MAS 105.

**HIS 113 Chinese Civilization**

3 credit hours, 3 periods (3 lec.)

Introductory survey of the civilization of China from its origins to the present. Formative Period (prehistory - 221 B.C.), unification and expansion (221 B.C. - A.D. 221), period of disunity (222-588), flowering of Chinese culture (589-1279), impact of the Mongols on Chinese civilization (1280-1368), Ming Dynasty peace and prosperity (1368-1644), Qing Dynasty - The Manchu Conquest (1644-1911), Republican China (1912-1949), and People's Republic of China (1949- ).

**HIS 114 Japanese Civilization**

3 credit hours, 3 periods (3 lec.)

Introductory survey of the civilization of Japan from its origins to the present. Includes the Formative Period (prehistory-A.D. 250); influence of Chinese civilization on Japan (300-794); Heian Period - emergence of uniquely Japanese cultural forms (794-1185); Kamakura Shogunate - establishment of military government (1185-1336); Ashikaga Shogunate - civil war and the reunification of Japan (1336-1573); Tokugawa Period (1600-1867); Meji Period (1868-1912); Taisho Period (1912-1925); Showa Period (1926-1989); and Heisei Period (1990-present).

**HIS 122 Tohono O'odham History and Culture**

3 credit hours, 3 periods (3 lec.)

Survey of Tohono O'odham culture, historical development, and modern issues. Includes development of culture and world view, sources of Tohono O'odham history, role in economic and social development of Northwestern Mexico and Southwestern United States, and contemporary Tohono O'odham issues.

*Information: Same as AIS 122.*

**HIS 124 History and Culture of the Yaqui People**

3 credit hours, 3 periods (3 lec.)

Survey of the cultural heritage of the Yaqui people and the history of their struggles to protect Yaqui land and customs. Includes Yaqui origins, pre-Columbian Yaqui society, oral traditions and world view, early Spanish contacts, Catholic influences, economic development, rebellions, resistance and leadership, and policies regarding Native Americans. Also includes the deportation and enslavement of the Yaqui from the 17th to the 20th centuries by the Spanish and American governments and the deportation of the Yaqui by the United States in the 1880's. Also examines acts of genocide and subjugation against the Yaqui in revolutionary Mexico, 20th century relocation and adaptation strategies of the Yaqui in the United States and the Yaqui culture of the 21st century.

*Information: Same as AIS 124.*

**HIS 127 History and Culture of the Mexican-American in the Southwest**

3 credit hours, 3 periods (3 lec.)

Historical survey of Mexicano(a)/Chicano(a) people from their indigenous origins in Meso-America and the Gran Chichimeca to the present in the United States. Includes historical writings, movements north under Spain and Mexico, repression and resistance. Also covers the political, economic, religious and social movements of the 19th, 20th and early 21st centuries.

*Information: Same as ANT 127 and MAS 127.*

**HIS 141 History of the United States I**

3 credit hours, 3 periods (3 lec.)

Survey of the major developments in American history from the Columbian voyages to the Era of Reconstruction. Includes Colonial America, the Formative Years - 1776-1815, the Early National Period - 1815-1850, and the coming of the Civil War and its aftermath. Also includes the social, intellectual, and political aspects of early American life.

**HIS 141HC History of the United States I: Honors**

3 credit hours, 3 periods (3 lec.)

Survey of the major developments in American history from the Columbian voyages to the Era of Reconstruction. Includes Colonial America, the Formative Years - 1776-1815, the Early National Period - 1815-1850, and the coming of the Civil War and its aftermath. Includes the social, intellectual, and political aspects of early American life. Also includes Honors content.

*Prerequisite(s): Must qualify for Honors program.*

*Information: Faculty or Advisor approval is required before enrolling in this course. Honors Content: Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a publishable quality peer reviewed paper or project in a format appropriate for the discipline: presentation of research, in class or to a wider audience.*

**HIS 142 History of the United States II**

3 credit hours, 3 periods (3 lec.)

Survey of the major developments in American history from era of Reconstruction to the present. Includes the era of Reconstruction, the emergence of modern America, the Early 20th Century, and America as a world power. Also includes the social, intellectual, and political aspects of contemporary American life.

**HIS 147 History of Arizona**

3 credit hours, 3 periods (3 lec.)

Survey of the major developments in the history of Arizona. Includes the Pre-Columbian period through the Spanish era, the Mexican Republic, the years as a U.S. territory, and the time since statehood to the present. Also includes the contributions of the various peoples who have formed the unique cultural and ethnic fabric of this area.

**HIS 148 History of Indians of North America**

3 credit hours, 3 periods (3 lec.)

History of the cultural development of Native Americans of North America and the interrelations of cultures. Includes Native American origins, early economic and social development, Europeans, eras in Native American history, modern leadership, and research studies.

*Information:* Same as AIS/ANT 148.

**HIS 160 Latin America Before Independence**

3 credit hours, 3 periods (3 lec.)

Survey of the history and people of Latin America from indigenous origins to independence. Includes theory and geography, indigenous Latin America, European background, colonial economy and society, and resistance and movements for independence in Latin America.

*Recommendation:* Placement on PCC assessment tests above REA 091 and into WRT 101.

*Information:* Course meets the AGEC Special Requirements of "I" (Intensive Writing), "G" (Global Awareness) and "C" (Cultural Diversity). Students will have writing assignments that require college level skills, and writing quality will be graded.

**HIS 161 Modern Latin America**

3 credit hours, 3 periods (3 lec.)

Survey of the history and people of Latin America from Independence to the present. Includes Post-Colonial consolidation, early Twentieth Century, United States - Latin America relations, guerrilla movements and reaction and Latin America today.

*Recommendation:* HIS 160, and placement on PCC assessment exams above REA 091 and into WRT 101.

*Information:* Course meets the AGEC Special Requirements of "I" (Intensive Writing), "G" (Global Awareness), and "C" (Cultural Diversity). Students will have writing assignments that require college level skills, and writing quality will be graded.

**HIS 180 Women in Western History**

3 credit hours, 3 periods (3 lec.)

Survey of women's history in the Western World from Antiquity to the Modern Age. Includes Ancient Near Eastern civilizations, women of the Classical World, medieval women, reformation and revolution in early modern and progressive eras, women and war in the Western World, and postwar social developments and movements.

**HIS 240 Medieval History**

3 credit hours, 3 periods (3 lec.)

A survey of the medieval period of Western Civilization from A.D. 410-1453. Includes an examination of the major political, military, social, economic, religious, artistic, and intellectual events of the Middle Ages.

**HIS 245 Abraham Lincoln and the American Civil War**

3 credit hours, 3 periods (3 lec.)

Overview of the American Civil War. Includes a survey of conditions that led to the American Civil War; an examination of the major political, military, social and economic events of the Civil War; and a treatment impact of the Civil War on the United States and the Confederate States of America. Also includes an emphasis on the political career of Abraham Lincoln and the destruction of slavery.

**HIS 254 History of Women in the United States: The 20th Century**

3 credit hours, 3 periods (3 lec.)

Survey of American women's history from 1900 to the present. Includes early 20th century gender, race/ethnicity, class formation, women and war, civil rights, feminist, and other social movements, and feminism's change since the 1970's.

**HIS 274 The Holocaust**

3 credit hours, 3 periods (3 lec.)

Examines the causes, events and legacies of the Nazi assault on humanity. Includes the history of hatred against the Jews and other ethnic, religious, and political groups in Europe, historical antecedents and preconditions of the Holocaust, the rise of the Third Reich and the creation of a racial state, the "Final Solution" and the aftermath.

**HIS 280 History of the World Wars**

3 credit hours, 3 periods (3 lec.)

Survey of the two world wars of the twentieth century. Includes prelude to war, outbreak of the Great War, war of two fronts, inter-war years, World War II, and post war world. Also includes changes created in society, government, and international relations as a result of the two wars.



**HIS 281 Cold War: Soviet Confrontations and Vietnam**

3 credit hours, 3 periods (3 lec.)

Causes and effects of US-Soviet confrontations from WW II to 1994. Includes origins of the Cold War from WW II, initial Soviet probes, challenges in the Far East, probes and rhetoric, Soviet globalism, Vietnam, period of detente, end of detente, new challenge to Soviet Expansionism, and new vision and new world order.

*Information:* This is a continuation course to HIS 280 History of the World Wars; however, HIS 280 is not a prerequisite. This course will require a college level reading ability.

**HIS 296 Independent Study in History**

1-3 credit hours, 1-3 periods (1-3 lec.)

Independent study in history. Includes topic identification, research plan, data gathering, and presentation of findings.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of three credit hours.

## Histotechnology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**HTP 101 Histology**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to the microscopy of human cells and tissues. Includes histology, cytoplasm, nucleus, extracellular matrix, epithelia, connective tissues, muscle, and systems of the human body. Also includes regeneration, and molecular mechanisms of cellular identity.

*Prerequisite(s):* BIO 156IN or appropriate score on placement exam, CHM 130IN or higher, and MAT 097 or higher.

*Recommendation:* CSA 100 prior to enrollment in course.

*Information:* Computer proficiency expected of students in Histotechnology program.

**HTP 105 Histotechniques I**

4 credit hours, 8 periods (2 lec., 6 lab)

Introduction to the fundamental techniques of histology. Includes fixation, processing, instrumentation, safety, and routine staining.

*Prerequisite(s):* HTP 101.

**HTP 200 Histotechniques II**

4 credit hours, 8 periods (2 lec., 6 lab)

Continuation of HTP 105. Introduction to the fundamental techniques of histology. Includes connective and muscle tissue, nerves, microorganisms, pigments, minerals, cytoplasmic granules, carbohydrates, and amyloid.

*Prerequisite(s):* HTP 105.

**HTP 201 Histotechniques III**

4 credit hours, 6 periods (3 lec., 3 lab)

Continuation of HTP 200. Survey of special histotechniques. Includes immunohistochemistry, enzyme histochemistry, immunofluorescent staining, antigen detection, and cellular organelle staining. Also includes use of epitope tags in histochemistry, diagnostic immunohistochemistry, and microscopy.

*Prerequisite(s):* HTP 200.

**HTP 202 Histotechniques IV**

3 credit hours, 3 periods (3 lec.)

Continuation of HTP 201. Preparation for the American Society for Clinical Pathologists (ASCP) Certification. Includes ASCP organization and testing. Also includes safety in the histology lab, fixation, processing, microtomy, nuclear and cytoplasmic staining, and special staining.

*Prerequisite(s):* HTP 201 and HTP 291 (or concurrent enrollment in HTP 291).

**HTP 291 Histotechnology Internship**

1-5 credit hours, 3-15 periods (3-15 lab)

Supervised work experience in a clinical and research setting. Includes emphasis on the observation and enhancement of professional and management skills, team communication and interaction. Also includes the application of research principles, procedures, protocols, and regulations in the workplace. Student may rotate through a variety of clinical and research sites agreed upon by the instructor and student.

*Prerequisite(s):* HTP 101, 105, 200, 201, and 202, or concurrent enrollment in HTP 202.

*Information:* Consent of instructor is required before enrolling in this course. May be taken five times for a maximum of five credit hours.

## Honors Program

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### HON 101 Honors Colloquium

3 credit hours, 3 periods (3 lec.)

An interdisciplinary course introducing honors students to scholarly research, writing, and conversation. Includes defining and debating contemporary issues in the arts, humanities, sciences, social sciences, business, technology, and/or math. Also includes opportunities for students to develop their critical thinking and creativity; to enhance their practices of research, critical reflection, argumentation, and collaboration; to identify and clarify "real world" issues; to improve their problem-solving capabilities using appropriate group interaction; and to explore their understandings of cultural diversity in local and global contexts.

**Information:** Students must be eligible for Honors courses based on placement tests, and have a 3.5 GPA or higher, and/or be a Pima Scholar before enrolling in this course.

### HON 210 College Honors Advisory Council

1 credit hour, 1 periods (1 lec.)

Student representatives to the College Honors Advisory Council (CHAC) attend CHAC meetings and participate in discussions and decision making; participate in Honors Program events and engagement activities, including local campus events; and take on leadership roles in the Honors Program, the Honors Club, PTK, and/or their local campuses.

**Prerequisite(s):** HON 101 or concurrent enrollment.

**Information:** May be taken three times for a maximum of three credit hours.

### HON 244 Honors Field Excursions

1-3 credit hours, 1-3 periods (1-3 lec.)

Field excursions provide academic development through travel and study. Students study issues and ideas related to the arts, humanities, sciences, social sciences, businesses, technology, and/or math in real world settings. Excursions provide students with direct experience of domestic cultures and subcultures. Excursions may include a range of visits to domestic or foreign cultural and educational sites; to scientific or business locations; local field excursions; or attendance at conferences and meetings.

**Recommendation:** Consult instructor for prerequisite(s) and/or corequisite(s) specific to planned excursions.

**Information:** Must qualify for Honors program. Faculty or Advisor approval may be required. Depending on the nature of the excursion, there may be additional prerequisite(s) and/or corequisite(s). May require domestic or foreign travel expenses.

### HON 280 Advanced Honors Colloquium

1-3 credit hours, 1-3 periods (1-3 lec.)

In-depth interdisciplinary course enhancing honors students' scholarly research, writing, and conversation. Includes defining, discussing, and debating contemporary issues in the arts, humanities, sciences, social sciences, business, technology, and math. Also includes opportunities for students to develop their creativity; to improve their practices of critical reflection, argumentation, research, and collaboration; to identify and clarify "real world" issues; and to improve problem-solving capabilities using appropriate group interaction. Course content may be organized around special topics, themes,

**Information:** Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

### HON 296 Honors Independent Study Project

1-3 credit hours, 1-3 periods (1-3 lec.)

Exploration of special interest areas for Honors students. Content to be determined jointly by student and faculty mentor.

**Prerequisite(s):** HON 101.

**Information:** May be taken three times for a maximum of three credit hours.

## Hotel and Restaurant Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### HRM 100 Introduction to the Hospitality Industry

3 credit hours, 3 periods (3 lec.)

Overview of the hospitality industry, including the food service business, restaurants and hotels, and the meeting and conference industry. Also includes hospitality industry management and leadership; human resources; marketing and promotion; franchising; and ethics in hospitality management.

**HRM 101 Front Office Procedures**

3 credit hours, 3 periods (3 lec.)

Principles and procedures for front office operations in hotels and resorts. Includes classification of hotels, organizational structure, front office operations planning and evaluation, and human resources management. Also includes reservations, registration, front office accounting, check out and settlement, night audit, and revenue management.

**HRM 104 Hotel Food and Beverage Management**

3 credit hours, 3 periods (3 lec.)

Hotel food and beverage operations and management. Includes management structure and functions, personnel management, cost control/quality assurance, tools and equipment, facilities, and purchasing and storage. Also includes volume food management; beverage management and service; food products and preparation techniques; menus and recipes; sanitation; and liability issues.

**HRM 110 Food Service Systems Management**

3 credit hours, 3 periods (3 lec.)

Introduction the various components of systematic food service management. Includes investigation of management principles, various management control methods, and critical operational functions.

**HRM 111 Commercial Food**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to all facets of hot food preparation in a commercial kitchen. Includes the application of proper cooking skills and techniques. Also includes the use and/or preparation of a variety of food items, such as sauces, thickening agents, soups, vegetables, starches, meats, and pastries.

*Prerequisite(s):* HRM 110

*Information:* This course requires 10 hours of commercial kitchen demonstration.

**HRM 120 Meetings and Convention Management**

3 credit hours, 3 periods (3 lec.)

Basic principles for planning and operating meetings, conventions, and trade shows. Includes types of events and their economic impact, meetings as a social phenomenon, and the role of the meeting planner. Also includes practical tools for preliminary planning and needs analysis, program design and budgeting, site selection, and on-site management.

**HRM 140 Introduction to Bar and Beverage Management**

3 credit hours, 3 periods (3 lec.)

Introduction to the fundamental areas of beverage operations. Includes planning of the bar, bar staffing and training, legal regulations, standardized recipes, drink costing and pricing, and beverage production methods and mixology. Also includes product identification; purchasing, receiving, storing and issuing beverages; service of spirits, wine and beer products; marketing and menu development; and cost controls of a beverage operation.

*Prerequisite(s):* HRM 110.

*Recommendation:* Students should be at least 21 years of age.

**HRM 150 Hospitality Property Management**

3 credit hours, 3 periods (3 lec.)

An examination of planning, implementing, and monitoring the hospitality operation environment with the aim of enhancing the guest experience by fostering a proactive approach to compliance, conformance to standards and competitiveness. Includes design and layout of guestrooms, lobbies, food outlets, and recreation outlets as it pertains to maintenance and housekeeping; product and service analysis; inventory control; preventative maintenance; renovations; liability; protecting guests and their property; asset protections; grounds and landscaping; ecology; and transportation.

**HRM 199 Introductory Co-op: Hotel and Restaurant Management**

1 credit hour, 1 periods (1 lec.)

Introduction to cooperative education for first-year students. Includes instruction that supports success in securing and retaining a training job related to hotel and restaurant management. Also includes communication skills; time, energy, and stress management; career information and its uses; the job market; principles, theories, and practices in the career field; and problems in the work environment.

*Corequisite(s):* HRM 199WK

*Information:* May be taken two times for a maximum of two credit hours.

**HRM 199WK Co-op Work: Hotel and Restaurant Management**

1-8 credit hours, 5-40 periods (5-40 lab)

A supervised cooperative work program for students in hotel and restaurant management. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

*Corequisite(s):*HRM 199

*Information:* May be taken two times for a maximum of sixteen credit hours.

**HRM 210 Managing Customer Service for the Hospitality Industry**

3 credit hours, 3 periods (3 lec.)

Introduction to managing customer service expectations and experiences, with strategies and tactics for managing the customer service experience in all hospitality enterprises. Emphasis on customer satisfaction, customer retention, company profitability, and differing customer service approaches analyzed and evaluated. Topics include: exceptional customer service, communication with the internal customer, handling guest complaints, and managing customer relations. Also includes: how to create a positive customer service climate that harnesses the natural talents of service professionals; guidance on the hiring, training, supporting, retention, and empowerment of service professionals.

*Prerequisite(s):* HRM 100.

**HRM 235 Hospitality Law**

3 credit hours, 3 periods (3 lec.)

Examination of legal aspects of hospitality management. Includes basic legal principles governing hospitality operations; the hotel-guest relationship; the hotel's duties to guests and others; laws governing restaurants, foodservice, and bars; and laws relating to hotel employees.

*Prerequisite(s):* HRM 100.

**HRM 299 Intro to Advanced Co-op: Hotel and Restaurant Management**

1 credit hour, 1 periods (1 lec.)

Advanced cooperative education class that supports success in securing and retaining a training job in hotel and restaurant management. Includes communication skills; time, energy, and stress management; career information and its uses; the job market; principles, theories, and practices in the career field; and problems in the work environment.

*Corequisite(s):*HRM 299WK

*Information:* A minimum of 12 credit hours of Hotel and Restaurant Management (HRM) prefix courses or one year of related industry work experience is required before enrolling in this course. May be taken two times for a maximum of two credit hours.

**HRM 299WK Advanced Co-op Work: Hotel and Restaurant Management**

1-3 credit hours, 5-15 periods (5-15 lab)

A supervised cooperative work program for advanced students in hospitality management. Instructor-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

*Corequisite(s):*HRM 299

*Information:* A minimum of 12 credit hours of Hotel and Restaurant Management (HRM) prefix courses or one year of related industry work experience is required before enrolling in this course. May be taken for a maximum of three credit hours.

## Human Resources Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**HRS 101 Introduction to Human Resources Management**

3 credit hours, 3 periods (3 lec.)

Practical applications for success in personnel management. Includes human resources management in perspective, meeting requirements, the challenge, function/environment, recruitment, compensation, incentive plans, training and development, and labor relations.

**HRS 102 Human Resource Law**

3 credit hours, 3 periods (3 lec.)

Legal issues associated with human resources management. Includes hiring, personnel practices, wages and hours, taxes employee benefits, family and medical leave, health and safety, illegal discrimination, workers with disabilities, and termination. May also include issues associated with independent contractors, unions, and lawyers and legal research.

**HRS 103 Benefits and Compensation**

3 credit hours, 3 periods (3 lec.)

Study of benefits and compensation management. Includes strategic compensation planning, components of the wage mix, job evaluation systems, the compensation structure, governmental regulation of compensation, significant compensation issues, employee benefits programs, employee benefits required by law, discretionary major employee benefits, employee services, reasons and requirements for incentive plans, setting performance measures, administering incentive plans, incentive for non-management employees, incentive for management employees, incentives for executive employees, and gain-sharing incentive plans.

**HRS 104 Job Requirements, Recruitment, and Personnel Selection**

3 credit hours, 3 periods (3 lec.)

Concepts, techniques, and regulation that apply to job requirements, recruitment, and personnel selection. Includes relationships of job requirements and HRS functions, job analysis, job design, matching people and jobs, sources of information about job candidates, employment tests, the employment interview, and reaching a selection decision.

**HRS 105 Training and Development**

3 credit hours, 3 periods (3 lec.)

Introduction to training, career development, and appraising and improving performance. Includes the scope of training, conducting the needs assessment, designing the training program, implementing the training program, evaluating the training program, special topics in training and development, elements of career development programs, career development and management succession, career development for a diverse workforce, personal career development, performance appraisal programs, developing an effective appraisal program, performance appraisal methods, and appraisal interview.

**HRS 106 Labor Relations**

3 credit hours, 3 periods (3 lec.)

Exploration of issues in the area of labor relations. Includes employee rights, disciplinary policies and procedures, appealing disciplinary actions, organizational ethics in employee relations, government regulation of labor relations, the labor relations process, structures, functions, and leadership of labor unions, labor relations in the public sector, contemporary challenges to labor organizations, the bargaining process, trends in collective bargaining, the labor agreement, and administration of the labor agreement.

## Humanities

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**HUM 131 Mythology**

3 credit hours, 3 periods (3 lec.)

Myths, legends, and folktales of the Greeks and Romans. Includes basic concepts of myths, myths of the Greeks and Romans, major Greek divinities and their Roman counterparts, stories about the major divinities, artistic representation of myths, effects of ancient myths on western literary movement, similarities and differences between major mythic systems, and anthropological and psychological approaches to mythic systems. Also includes a humanistic approach to the study of Greek and Roman sacred narratives, stories derived from oral traditions, and cultural events, which invite symbolic analysis.

**HUM 196 Independent Studies in Humanities**

3 credit hours, 3 periods (3 lec.)

Reading and research to be determined between the student and the instructor.

**HUM 251 Western Humanities I**

3 credit hours, 3 periods (3 lec.)

Introduction to major cultures from rise of city-states through the early Roman Christian era. Includes general history of ideas, art, architecture, religion, philosophy, drama, music, and literature from ancient Near Eastern civilizations, and Greek, Roman, and Early Roman Christian civilizations. Also includes readings such as the Epic of Gilgamesh, Homer, Sophocles, Aristophanes, Plato, Aristotle, Virgil's Aeneid, Hebrew and the Christian Scriptures, and St. Augustine.

**HUM 252 Western Humanities II**

3 credit hours, 3 periods (3 lec.)

Introduction to major western cultures from the early Medieval through AD 1600. Includes general history of ideas, art, architecture, religion, philosophy, drama, music, and literature from early and late Medieval periods, Renaissance-Reformation, and Counter-Reformation. Also includes readings such as heroic and religious works of the Middle Ages, Dante, Chaucer, Machiavelli, Shakespeare, and Cervantes.

**HUM 253 Western Humanities III**

3 credit hours, 3 periods (3 lec.)

Introduction to the culture of the modern western world from AD 1600 to the present. Includes general history of ideas, art, architecture, religion, philosophy, drama, music and literature from Enlightenment, Baroque, Romantic, Pre-Modern, and Contemporary periods. Also includes readings such as Voltaire, Rousseau, Goethe, Romantic, pre- modern and contemporary literature, poetry, and drama.

**HUM 260 Intercultural Perspectives**

3 credit hours, 3 periods (3 lec.)

Literary and artistic works of American Indians and Asian, Black, and Hispanic Americans, both men and women. Includes traditional and modern works and contributions to American civilization.

## Industrial and Commercial Technologies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ICT 100 Energy Industry Fundamentals**

3 credit hours, 3 periods (3 lec.)

Introduction to various types of energy and their conversion to useable energy such as electrical power. Includes how generated electrical power is transmitted and distributed to the point of use.

**ICT 101 Introduction to the Natural Gas Industry**

3 credit hours, 3 periods (3 lec.)

Introduction to the natural gas industry. Includes the history of the gas industry, safety issues, and field operations.

**ICT 102 Introduction to Natural Gas Operations**

2 credit hours, 2 periods (2 lec.)

Introduction to natural gas operations. Includes natural gas facts, natural gas networks, general security awareness, basic fire training, abnormal and unusual operating conditions, emergency response, and operations of MSA valves. Also includes visual inspection for atmospheric corrosion, meter locations, energy diversion, turn offs, above ground coatings, and leak test at operating pressure.

## Industrial Maintenance

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**IMO 121 NCCER Industrial Maintenance Electrical & Instrumentation L1**

9.5 credit hours, 10.4 periods (6.6 lec., 3.8 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes orientation to the trade, tools of the trade, fasteners and anchors, oxyfuel cutting, gaskets and packing, craft-related mathematics, construction drawings, pumps and drivers, valves, test equipment introduction, material handling and hand rigging, mobile and support equipment, and lubrication.

*Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.*

**IMO 121A NCCER Industrial Maintenance E&I L1 Trade Orientation**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Trade orientation to the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes work performed by industrial maintenance craftworkers, career opportunities, apprenticeship program objectives, craftworker responsibilities and desirable characteristics, and craftworker safety.

*Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.*



**IMO 121B NCCER Industrial Maintenance E&I L1 Tools Orientation**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Orientation to tools used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes pipe vise, pipe threading machine, cut-off machine, portable power drivers, and the inspection and basic maintenance of tools.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121C NCCER Industrial Maintenance E&I L1 Fasteners/Anchors**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Fasteners and anchors used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes threaded fasteners, screws, anchors, and toggle bolts.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121D NCCER Industrial Maintenance E&I L1 Oxyfuel Cuttings**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Oxyfuel cutting in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes equipment set up, using the oxyfuel torch, shutting down and disassembling equipment, performing basic oxyfuel cuts and track burner.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121E NCCER Industrial Maintenance E&I L1 Gaskets and Packing**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Gaskets and packing used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes gasket layout and installation, cut and install packing, and O-ring installation.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121F NCCER Industrial Maintenance E&I L1 Craft Math**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Craft-related mathematics used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes special measuring devices, tables of weights and measures, basic formulas; problems involving area, volume, circumference and right triangles.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121G NCCER Industrial Maintenance E&I L1 Construction Drawings**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Construction drawings used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes special parts of construction drawings and types of drawings.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121H NCCER Industrial Maintenance E&I L1 Pumps and Drivers**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Pumps and drivers used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes pumps and drivers common to industrial maintenance operations.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121I NCCER Industrial Maintenance E&I L1 Valves**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Valves used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes valve functions, including start and stop flow, regulate flow, relieve pressure, regulate the direction of flow, and valve locations, positions, storage and handling.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121J NCCER Industrial Maintenance E&I L1 Test Equipment**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Test equipment used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes types of test equipment and automated diagnostic tools.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121K NCCER Industrial Maintenance E&I L1 Material Handling/Rigging**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Material handling and rigging used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes safety procedures, rigging equipment, knots used in rigging, center of gravity of a load, rigging hardware, hand signals and sling tension calculation.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121L NCCER Industrial Maintenance E&I L1 Mobile Support Equipment**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Mobile and support equipment used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes safety precautions, motor-driven equipment, preventive maintenance and aerial lift inspection.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 121M NCCER Industrial Maintenance E&I L1 Lubrication**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Lubrication used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes federal guidelines, Material Safety Data Sheet (MSDS), lubricants and greases.

*Information:* IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

**IMO 122 NCCER Industrial Maintenance Electrical & Instrumentation L2**

11.25 credit hours, 13.5 periods (9 lec., 4.5 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes industrial safety, the National Electrical Code®, electrical theory, alternating current, test equipment, flow, pressure, level and temperature, process mathematics, hand bending, tubing, instrument drawings and documents, conductors and cables, and conductor terminations and splices.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122A NCCER Industrial Maintenance E&I Industrial Safety**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Industrial safety basics in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes safe work practices, electrical safety, protective equipment, energy control and environmental hazards.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122B NCCER Industrial Maintenance E&I National Electrical Code®**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Introduction to the National Electrical Code® (NEC®) in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes the purpose and history of the NEC®, layout of the NEC® and other organizations involved with the standards for the manufacture and use of electrical products.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122C NCCER Industrial Maintenance E&I Electrical Theory**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Electrical theory in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes atomic theory, electrical power, schematic representations, resistors and circuits.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122D NCCER Industrial Maintenance E&I Alternating Current**

1.25 credit hours, 1.5 periods (1 lec., .5 lab)

Electrical theory in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes sine waves, AC phase relationships, AC circuits, capacitance and transformers.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122E NCCER Industrial Maintenance E&I Test Equipment**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Test equipment in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes electrical meters and instrumentation test equipment.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122F NCCER Industrial Maintenance E&I Flow/Pressure/Level/Temp**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Flow, pressure, level and temperature in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes flow, pressure, level and temperature in common instrument control systems.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122G NCCER Industrial Maintenance E&I Process Mathematics**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Process mathematics in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes common metric measurements, calculators and instrumentation applications used by industrial maintenance electrical and instrumentation technicians.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122H NCCER Industrial Maintenance E&I Hand Bending**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Hand bending of conduits in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes equipment for hand bending conduit, and cutting, reaming and threading conduit.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122I NCCER Industrial Maintenance E&I Tubing**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Tubing in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes the sizes and types of tubing common to commercial plants and other facilities, the storage of tubing and the installation of tubing.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122J NCCER Industrial Maintenance E&I Tube&Pipe System Maintenance**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Tube and pipe systems maintenance in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes cleaning and purging tubing and piping systems, and pressure and leak testing of tube and pipes.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122K NCCER Industrial Maintenance E&I Intro to Drawings & Docs**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Introduction to instrument drawings and documents in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes instrument symbols and identification, instrument index, instrument specifications, notes and details; installation details, drawings, and control loops.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills, NCCER Industrial Maintenance Electrical, and Instrumentation Level One curriculum.

**IMO 122L NCCER Industrial Maintenance E&I Conductors and Cables**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Conductors and cables in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes conductors and insulation, and installing conductors in conduit systems.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 122M NCCER Industrial Maintenance E&I Conductor Terminatn/Splices**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Conductor terminations and splices in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes stripping and cleaning conductors, wire connections, control and signal cable, low voltage connectors and terminals, and connector installation.

*Prerequisite(s):* IMO 121.

*Information:* IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

**IMO 123 NCCER Industrial Maintenance Electrical & Instrumentation L3**

12.25 credit hours, 14.7 periods (9.8 lec., 4.9 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes hazardous locations, electronic components, electrical and instrumentation drawings, motor controls, distribution equipment, transformer applications, conductors, temporary grounding, layout and installation of tubing and piping systems, machine bending of conduit, hydraulic controls, pneumatic controls and motor-operated valves.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123A NCCER Industrial Maintenance E&I L3 Hazardous Locations**

.75 credit hours, .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes hazardous locations, electronic components, electrical and instrumentation drawings, motor controls, distribution equipment, transformer applications, conductors, temporary grounding, layout and installation of tubing and piping systems, machine bending of conduit, hydraulic controls, pneumatic controls and motor-operated valves.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.



**IMO 123B NCCER Industrial Maintenance E&I L3 Electronic Components**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Electronic components in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes semiconductor fundamentals, diodes, rectifiers, light-emitting diodes, photo diodes, opto-isolators, zener diodes, transistors, silicon-controlled rectifiers, diacs and triacs, printed circuit boards, operational amplifiers and basic digital gates.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123C NCCER Industrial Maintenance E&I L3 Electrl Instrmnt Drawing**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Electrical and instrumentation drawings in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes electrical drawings, instrumentation drawings and standardized design methods.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123D NCCER Industrial Maintenance E&I L3 Motor Controls**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Motor Controls in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes electromagnetic relays, magnetic contactors, overload protection, magnetic and manual motor starters, control transformers and pilot devices, drum switches, enclosures, diagrams, NEC® regulations for installation of motor circuits, and connecting motor controllers for specific applications.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123E NCCER Industrial Maintenance E&I L3 Distribution Equipment**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Distribution Equipment in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes voltage classifications, switchboards, switchgear, testing and maintenance, NEC® requirements for switchboards, ground faults, HVL switches, bolted pressure switches, transformers, instrument transformers, circuit breakers, panelboards, and NEC® requirements for services.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123F NCCER Industrial Maintenance E&I L3 Transformer Applications**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Transformer applications in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes transformer types, specialty transformers sizing Buck-and-Boost transformers, and harmonics.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curriculums.



**IMO 123G NCCER Industrial Maintenance E&I L3 Conductor Selection/Calc**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Conductor selection and calculation in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes conductor applications, conductor properties, and voltage drop.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123H NCCER Industrial Maintenance E&I L3 Temporary Grounding**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Temporary grounding in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes electrical safety analysis, temporary grounding purpose and terms, sources of hazardous energy, temporary grounding preparations, temporary grounding devices, ground cable assemblies, and installing and removing temporary grounding devices.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123I NCCER Industrial Maintenance E&I L3 Layout Tubing Piping Sys**

1.5 credit hours, 1.8 periods (1.2 lec., .6 lab)

Layout and installation of tubing and piping systems in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes tubing and piping system layout, measuring and bending tubing and piping, and support tubing and piping.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123J NCCER Industrial Maintenance E&I L3 Machine Bending Conduit**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Machine bending of conduit in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes NEC® requirements for the machine bending of conduit, types of bends, conduit bending geometry, mechanical benders, mechanical stub-ups, mechanical offsets, electric and hydraulic benders, segment bending techniques, tricks of the trade, PVC conduit installations and bending PVC conduit.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123K NCCER Industrial Maintenance E&I L3 Hydraulic Controls**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Hydraulic controls in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes system safety, principles of hydraulics, fluids, system parts, pumps, motors, inspecting and troubleshooting, and applications.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123L NCCER Industrial Maintenance E&I L3 Pneumatic Controls**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Pneumatic controls in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes system safety, physical characteristics of gases, effects of atmospheric pressure, compressing gases, pneumatic transmission of energy, compressor operation and types, treatment of compressed air, pneumatic system components, pneumatic symbols, and troubleshooting pneumatic systems.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 123M NCCER Industrial Maintenance E&I L3 Motor-Operated Valves**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Motor-operated valves in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes safety, types of motor-operated valves, and set up.

*Prerequisite(s):* IMO 121 and 122.

*Information:* IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

**IMO 124 NCCER Industrial Maintenance Electrical & Instrumentation L4**

11 credit hour, 13.2 periods (8.8 lec., 4.4 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes standby and emergency systems, basic process control elements, transducers, and transmitters, instrumentation calibration and configuration, pneumatic control valves, actuators, and positioners, performing loop checks, troubleshooting and commissioning a loop, process control loops and tuning, data networks, programmable logic controllers, and distributed control systems.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124A NCCER Industrial Maintenance E&I L4 Standby/Emergency System**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Standby and emergency systems for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes system components, storage batteries, static uninterruptible power supply, NEC® requirements for emergency systems and emergency system circuits for lights and power.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124B NCCER Industrial Maintenance E&I L4 Process Control Elements**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Process control elements, transducers and transmitters for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes the fundamentals of process control, detectors, secondary elements, transducers and transmitters.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124C NCCER Industrial Maintenance E&I L4 Instrument Calibration**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Instrument calibration and configuration for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes defining calibration, pneumatic calibration equipment and calibrating procedures, analog calibration equipment and calibrating procedures, smart transmitters and transducers.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124D NCCER Industrial Maintenance E&I L4 Pneumatic Control Valves**

2.5 credit hours, 3 periods (2 lec., 1 lab)

Pneumatic control valves, actuators and positioners for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes pneumatic control valves, valves that regulate flow, pneumatic valve actuators, positioners, valve stems and leak prevention, replacing bonnet gaskets, packing valves, storing and handling valves, installing valves, valve markings and nameplate information and troubleshooting actuators and positioners.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124E NCCER Industrial Maintenance E&I L4 Performing Loop Checks**

.5 credit hours, .6 periods (.4 lec., .2 lab)

Performing loop checks for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes verifying mechanical installation, loop continuity tests, providing a loop and calibrating a loop.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124F NCCER Industrial Maintenance E&I L4 Troubleshooting Loop**

.75 credit hours, .9 periods (.6 lec., .3 lab)

Troubleshooting and commissioning a loop for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes fundamentals of troubleshooting a loop, troubleshooting an oscillating process, proving a loop and commissioning a loop.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124G NCCER Industrial Maintenance E&I L4 Process Control Loops**

1.5 credit hours, 1.8 periods (1.2 lec., .6 lab)

Process control loops and tuning for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes process control theory, process control loop basics, control loops, control modes, types of control applications, loop tuning methods, open-loop methods, visual loop tuning and application of process control.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124H NCCER Industrial Maintenance E&I L4 Data Networks**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Data networks for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes the data highway, transfer medium, OSI reference model, network topologies, access control, common network nomenclature, the internet, industrial networks, microcomputer-based LANs, proprietary control networks, bridge, routers and gateways, network cabling, optical fiber cable and cable testing.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124I NCCER Industrial Maintenance E&I L4 Programmable Logic Cntrl**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Programmable logic controllers (PLC) for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes PLC architecture, number systems, PLC hardware, processor modules, software, hardware to program correlation and guidelines for programming and installation.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

**IMO 124J NCCER Industrial Maintenance E&I L4 Distributed Cntrl System**

1 credit hour, 1.2 periods (.8 lec., .4 lab)

Distributed control systems for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes system architecture, controllers and their I/O, software server and engineering station, operator workstation, the network, installation and commissioning, maintenance and troubleshooting, and troubleshooting plant equipment with a distributed control system.

*Prerequisite(s):* IMO 121, 122, and 123.

*Information:* IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

## Integrated College Skills

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**ICS 079 Integrated College Skills (Reading and Writing)**

4 credit hours, 6 periods (3 lec., 3 lab)

Knowledge, skills and techniques required to be successful in college. Includes foundational skills in digital literacy, reading and writing. Also includes study techniques, goal setting, time management, note taking systems, and test taking strategies.

*Information:* This course can be taken twice for a maximum of 8 credit hours.

**ICS 081 Integrated College Skills (Mathematics)**

3 credit hours, 5 periods (2 lec., 3 lab)

Knowledge, skills and techniques required to be successful in college. Includes foundational skills in digital literacy and mathematics. Also includes study techniques, goal setting, time management, note taking systems, and test taking strategies.

*Information:* This course can be taken twice for a maximum of 6 credit hours.

## International Business Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### IBS 120 Cultural Environment of International Business

3 credit hours, 3 periods (3 lec.)

Examination of the cultural values of the foreign country in comparison to those of the United States. Includes social and religious customs, roles of men and women, attitudes toward time, humor, drugs and alcohol, and patterns of communication. Also includes political, educational and legal structures, health care values, attitudes toward shopping and conducting business, business structure, ethics and values.

## Interpreter Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### ITP 201 Ethics and Social Justice of Interpreting

3 credit hours, 3 periods (3 lec.)

Focuses on identifying personal ethics and beliefs as well as ethics as it relates to the field of interpreting and the Code of Professional Conduct. Also includes discussions of social justice theory and how it relates to ASL and English speaking communities.

*Prerequisite(s):* ASL 201 with a grade of B or better or better, and WRT 102.

### ITP 211 Fundamentals of Interpreting I

3 credit hours, 3 periods (3 lec.)

Foundation skills required for effective translation and interpretation. Includes critical analysis and application for systemically analyzing interactions and texts in order to ascertain where meaning lies. Also includes understanding and developing the cognitive skills for translating and interpreting.

*Prerequisite(s):* ASL 201 with a grade of B or better or better, and WRT 102.

### ITP 212 Fundamentals of Interpreting II

3 credit hours, 3 periods (3 lec.)

Focuses on the foundation skills required for effective translation and interpretation. Includes intralingual translation and interpretation text analysis techniques through main point abstraction, summarization, paraphrasing and restructuring a message while retaining its meaning. Discussions will address theoretical aspects of translating and interpreting techniques as well as specific issues related to interpreting skills. Also includes introduction to the interpreting field.

*Prerequisite(s):* ASL 202 with a grade of B or better, ITP 211 with a C or better, and WRT 102.

### ITP 296 Independent Study in Interpreting

1-3 credit hours, 3-9 periods (3-9 lab)

Extensive practice in identified areas of expressive/receptive interpreting/transliterating under supervision of an instructor.

*Prerequisite(s):* ITP 210, ITP 220 or 270.

*Information:* Consent of instructor required before enrolling. Course content and performance objectives will be determined by conference between student and instructional faculty.

## Italian

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### ITA 101 Elementary Italian I

4 credit hours, 4 periods (4 lec.)

Introduction to Italian. Includes basic oral and written forms, grammatical structures, interpersonal transactions, and geographical and cultural awareness.

### ITA 102 Elementary Italian II

4 credit hours, 4 periods (4 lec.)

Continuation of ITA 101. Includes additional Italian grammar and structure, transactions and topics in Italian, Italian compositions, manipulating meaning from readings, and interpreting meaning from listening.

*Prerequisite(s):* ITA 101.

## Japanese

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### JPN 101 Elementary Japanese I

5 credit hours, 5 periods (5 lec.)

Introduction to the Japanese language. Includes an overview of the Japanese language, speaking and listening, writing and reading, grammar, personal transactions, and the cultural context within which Japanese conversation takes place. Also includes writing and reading of Hiragana, Katakana, and 23 Kanji characters.

### JPN 102 Elementary Japanese II

5 credit hours, 5 periods (5 lec.)

Continuation of JPN 101. Includes oral and written forms, grammatical structures, interpersonal transactions, and the cultural component of communication competency.

*Prerequisite(s): JPN 101.*

### JPN 201 Intermediate Japanese I

5 credit hours, 5 periods (5 lec.)

Continuation of Japanese 102. Includes speaking and listening, grammar, personal transactions, and the cultural context to which Japanese conversations take place. Also includes reading and writing Hiragana, Katakana, and 250 Kanji characters.

*Prerequisite(s): JPN 102.*

### JPN 202 Intermediate Japanese II

5 credit hours, 5 periods (5 lec.)

Continuation of Japanese 201. Includes speaking and listening, grammar, personal transactions, and using more complex sentence structure in a cultural context within which Japanese conversations take place. Also includes Hiragana, Katakana, and 365 Kanji characters.

*Prerequisite(s): JPN 201.*

## Journalism

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### JRN 101 Introduction to Reporting and Media Writing

3 credit hours, 3 periods (3 lec.)

Introduction to news reporting. Includes journalism as a career, the journalist and the organization of the newsroom, defining news, news style, elements of a news story, fundamentals of writing news, and news gathering and reporting. Also includes organizing and writing the story, revision of stories, and ethics, libel and media law.

*Prerequisite(s): WRT 090 or required score on the writing assessment test.*

### JRN 102 Survey of Media Communications

3 credit hours, 3 periods (3 lec.)

Survey of theory, function and impact of mass media. Includes analysis of book and magazine publishing, newspapers, recorded music, radio, television, film, the Internet, public relations, advertising, and media uses and effects. Also includes media law, ethics, and global communication.

### JRN 185 Newspaper Publishing

3 credit hours, 7 periods (1 lec., 6 lab)

Print and online publication of the college's biweekly student newspaper. Includes elements of news, research mastery, information gathering, qualities of good writing, copy for publication, qualities of good reporting and copy editing, photographs, video and audio, media law, ethics, content and diversity, and using computers.

*Prerequisite(s): JRN 101.*

*Information: May be taken three times for a maximum of nine credit hours. Offered: Fall, Spring.*

### JRN 186 Writing for the Web

3 credit hours, 3 periods (3 lec.)

Introduction to techniques for writing on the World Wide Web. Includes Web technology; adding photos, graphics, video, audio, hypertext and hypermedia; and linear and nonlinear writing forms. Also includes media law and journalistic ethics.

*Prerequisite(s): JRN 101.*



**JRN 235 Writing/Reporting for Broadcast Journalism**

3 credit hours, 3 periods (3 lec.)

Introduction to news writing and reporting for television and radio. Includes broadcast news, formats, terminology and readability; shifting from print to broadcast writing; broadcast copy, news gathering and reporting; and reporting assignments and coverage. Also includes writing for radio and television newscasts; short and long packages for radio and television; live shots; breaking news coverage; influence of the Web and new distribution sources; basic video and audio editing; and broadcast law and ethics.

*Prerequisite(s): JRN 101.*

*Recommendation: Completion of JRN 102 before enrolling in this course or concurrent enrollment.*

**JRN 240 Editing, Layout, and Design**

3 credit hours, 3 periods (3 lec.)

Principles of news editing, layout, and design. Includes hands-on copy editing, fact-checking, proofreading, electronic page layout, typography, design, headline and caption writing, as well as, legal and professional responsibilities. Also includes grammar, language, and Associated Press style.

**JRN 260 Magazine and Feature Writing**

3 credit hours, 3 periods (3 lec.)

Writing newspaper and magazine feature articles for publication. Includes types of features, generating story ideas, guidelines for research, interviewing and writing; composing query letters, and submitting feature stories for publication.

**JRN 280 Photojournalism**

3 credit hours, 3 periods (3 lec.)

Practical applications of photographic skills to communicate news stories and document life. Includes basic camera operations, multimedia, digital imaging, and editing software, as well as, ethical and legal considerations. Also includes analysis of visual images, composition, technical concepts, cropping and sizing, layout of photo essays, video editing, and writing captions.

*Information: Access to a digital camera is required.*

**JRN 285 Advanced News Publication**

3 credit hours, 7 periods (1 lec., 6 lab)

Advanced work on print and online publication of the college's biweekly student newspaper. Includes news coverage; qualities of high-level writing, reporting, and copy editing; research and the use of computers, newsroom management, page design, and newspaper legal and ethical considerations.

*Prerequisite(s): JRN 185.*

*Information: May be taken three times for a maximum of nine credit hours.*

**JRN 290 Journalism Internship**

1-5 credit hours, 5-25 periods (5-25 lab)

Volunteer internship work experience at an approved site in the journalism field. Includes hands-on work experience, interpersonal communication, learning objectives and progress, and journalism internship assessment.

*Prerequisite(s): JRN 101.*

*Information: Consent of instructor is required before enrolling in this course. May be taken four times for a maximum of twenty credit hours.*

## Korean

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**KOR 101 Elementary Korean I**

4 credit hours, 4 periods (4 lec.)

Introduction to Korean. Includes basic oral and written Korean language forms, basic Korean grammatical structures, reading simple text, and Korean cultures and traditions.

**KOR 102 Elementary Korean II**

4 credit hours, 4 periods (4 lec.)

Continuation of KOR 101. Includes additional phonetics in the Korean language, additional grammatical structures, reading additional simple text, and additional Korean culture and traditions.

*Prerequisite(s): KOR 101.*

## Landscape Technician

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### LTP 119 Plants for Landscape Design

3 credit hours, 3 periods (3 lec.)

Principles and techniques of plant identification and usage. Includes environmental influences, landscape design basic principles, planting and plant care, plant taxonomy, general and specific applications for plants, and plant selection.

### LTP 129 Landscape Design

3 credit hours, 3 periods (3 lec.)

Principles and techniques of landscape design. Includes determination of project requirements, site analysis, measuring, design principles, preliminary design, landscape plan drawing, and development of a practice project and final project.

### LTP 140 Landscape Sustainability and Water Harvesting

3 credit hours, 3 periods (3 lec.)

Principles and strategies for sustainability in landscapes. Includes environmental impacts, techniques in water harvesting, environmental pollution, and the protection and maintenance of natural systems.

## Law Enforcement

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### LEN 105 Ethics and Leadership in Law Enforcement

3 credit hours, 3 periods (3 lec.)

Principles of ethical behavior for law enforcement professionals. Includes establishing a leadership role within the community. Also includes the Law Enforcement Code of Ethics, and Canons of Police Ethics as a basis to establish trust and protect a positive image of law enforcement.

### LEN 110 Multicultural Issues in Law Enforcement

3 credit hours, 3 periods (3 lec.)

Exploration of the value of diversity in a law enforcement environment. Includes the standards and norms of different groups and individuals and how they impact the attitudes and behaviors. Also includes the need to adapt interactions without compromising established societal norms.

### LEN 115 Interpersonal Relations in Law Enforcement

3 credit hours, 3 periods (3 lec.)

Exploration of the interactions of law enforcement professionals with peers and the public. Includes the unique roles and expectations which occur when entering a law enforcement career. Also includes specific methods and techniques used in situational interactions.

### LEN 120 Introduction to Law Enforcement

1 credit hour, 1 periods (1 lec.)

Overview of the components of the criminal justice system, their functions, responsibilities and interrelationships. Includes a historical perspective, and outline of regulatory agency functions, responsibilities, jurisdictional limitations, techniques of management and supervision, problem solving strategies, and the relationship between employee and supervisor. Also includes standards required of law enforcement personnel and the functions and responsibilities of the Arizona Peace Officer Standards and Training Board.

*Information: Admission to the Law Enforcement Academy or consent of instructor is required.*

### LEN 125 Law and Legal Matters I

3 credit hours, 3 periods (3 lec.)

Examination of the basic concepts, phrases and definitions needed to study criminal law. Includes an analysis of constitutional requirements, statutes and case law on search and seizure, the conditions under which an officer or citizen may make an arrest, an officer's duties and responsibilities prior to and during the arrest, and the rules of evidence. Also includes summonses and subpoenas, civil processes, and the functions of the various courts, agencies, and laws relating to juveniles.

*Prerequisite(s): LEN 120.*

*Information: Admission to the Law Enforcement Academy or consent of instructor is required.*

**LEN 126 Law and Legal Matters II**

3 credit hours, 3 periods (3 lec.)

Continuation of LEN 125. Includes the proper techniques for giving effective police testimony, outline of the United States Constitution, Arizona Revised Statutes (ARS) Title 13, and a review of common civil and criminal liability facing law enforcement agencies and officers.

*Prerequisite(s):* LEN 125.

**LEN 130 Patrol Procedures**

3 credit hours, 3 periods (3 lec.)

Study of the types, purposes and techniques of police patrol. Includes citizen protection, crime prevention, emergency and non-emergency situations, safely conducting a high risk vehicle stop, domestic disputes and managing crisis situations, mental illness and criminal behavior, crimes in progress, indicators of alcohol intoxication, and symptoms of medical conditions. Also includes use of police radio, hazardous materials, disasters, hate motivated acts, fires, and civil disputes.

*Information:* Admission to the Law Enforcement Academy or consent of instructor is required.

**LEN 135 Traffic Enforcement and Investigation**

3 credit hours, 3 periods (3 lec.)

Introduction to the attitude and techniques essential in dealing effectively with traffic violators. Includes the effects of alcohol and drugs on drivers and techniques for obtaining evidence for successful prosecution, the legal basis of the Uniform Traffic Citation, specific techniques for stopping and approaching suspects in vehicles, traffic collision investigation, and proper methods for taking and recording evidence at the collision scene. Also includes techniques for directing and controlling vehicular and pedestrian movements by means of hand signals, and applicable sections of the ARS relating to law enforcement authority.

*Information:* Admission to the Law Enforcement Academy or consent of instructor is required.

**LEN 140 Criminal Investigation**

4 credit hours, 4 periods (4 lec.)

Principles common to all types of investigation. Includes conducting a proper search, sketching the crime scene, recording and preserving notes, packing and marking evidence for identification, synthesizing information into a final report, the functions of a crime laboratory, proper interviewing and questioning techniques, and methods of fingerprinting. Also includes investigating the more common sex crimes, procedures for investigating cases involving death, organized criminal activities, techniques used in the investigation of assault, burglary, robbery, auto theft, child abuse, missing persons, and narcotics and dangerous drug violations.

*Information:* Admission to the Law Enforcement Academy or consent of instructor is required.

**LEN 145 Community and Police Relations**

2 credit hours, 2 periods (2 lec.)

Benefits and methods of developing positive police-community relations and recognizing cultural differences within the community. Includes the emotional and behavioral indicators of crime victims, personal communication, crime prevention functions of the patrol officer and various crime prevention programs.

*Information:* Admission to the Law Enforcement Academy or consent of instructor is required.

**LEN 150 Records and Reports**

3 credit hours, 3 periods (3 lec.)

Introduction to the characteristics of good reports and field notes and obtaining and using investigative information from police records systems. Includes form, style, and procedures for writing various reports, techniques for developing an accurate narrative, and proper and improper conclusions. Also includes modern technology in police data processing and information available through the use of local state and national records.

*Information:* Admission to the Law Enforcement Academy or consent of Law Enforcement Coordinator is required before enrolling in this course.

**LEN 205 Police Proficiency Skills I**

4 credit hours, 4 periods (4 lec.)

Methods of first aid and stress management. Includes providing emergency medical care to victims, legal and civil issues, and proper procedures for handling various traumas. Also includes the manifestations and techniques of managing personal job-related stress.

*Information:* Admission to the Law Enforcement Academy or consent of Law Enforcement Coordinator is required before enrolling in this course.

**LEN 206 Police Proficiency Skills II**

4 credit hours, 4 periods (4 lec.)

Continuation of LEN 205. Weapons and firearm safety, use, and less lethal options. Also includes the mechanical, safety features, servicing, and deployment of weapons and tactics.

*Prerequisite(s):* LEN 205.

*Information:* Admission to the Law Enforcement Academy or consent of Law Enforcement Coordinator is required before enrolling in this course. The student must achieve a minimum qualification score and demonstrate proficiency in the use and deployment of all weapons to successfully complete this course.

**LEN 207 Police Proficiency Skills III**

4 credit hours, 4 periods (4 lec.)

Continuation of LEN 206. Includes the development and demonstration of each participant's mental and physical condition through structured exercise and classroom education. Also includes various techniques for maintaining physical control of disruptive, combative, or potentially dangerous subjects, including restraint holds and other defensive tactics.

*Prerequisite(s):* LEN 206.

*Information:* Admission to the Law Enforcement Academy or consent of Law Enforcement Coordinator is required before enrolling in this course. Students must score in the fair range for all measures, except body fat, to complete this course.

**LEN 208 Police Proficiency Skills IV**

4 credit hours, 4 periods (4 lec.)

Continuation of LEN 207. Includes basic defensive driving techniques, hazardous road conditions, dynamics of a moving vehicle, the driving task, pursuit and high speed response procedures, high speed vehicle control, and methods to successfully stop fleeing vehicles. Also includes the liabilities and responsibilities associated with the use of force, factors in use of force situations.

*Prerequisite(s):* LEN 207.

*Information:* Admission to the Law Enforcement Academy or consent of Law Enforcement Coordinator is required before enrolling in this course.

**LEN 215 Post-Basic Academy**

1-16 credit hours, 1-16 periods (1-16 lec.)

Overview of department and agency rules, procedures, and practices. Includes Mobile Field Force (MFF), Uniformed Crime Reporting (UCR), department and agency specific forms and records, community policing, professional standards, auxiliary and secondary weapons, tactical firearms, traffic accident investigations, defensive tactics, health and fitness, department values, mission statement, department agency radio communications, and small unit tactics.

*Information:* The Arizona Law Enforcement Course Core: LEN 120, 125, 126, 130, 135, 140, 145, 150, 205, 206, 207, and 208 is required or consent of Law Enforcement Coordinator before enrolling in this course

**LEN 220 Supervised Field Training**

3 credit hours, 15 periods (15 lab)

Supervised application of the knowledge, skills, and abilities under field conditions as a part of probationary status. Includes requirements that the probationary officer demonstrate proficiency in patrol operations that meet agency standards.

*Information:* Arizona Post Certification and current employment as a probationary law officer is required before enrolling in this course.

## Law Enforcement Academy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**LEA 110 Law Enforcement Academy Part I**

24 credit hours, 24 periods (24 lec.)

Development of basic concepts, techniques, and applications utilized in law enforcement. Includes an introduction to ethics and leadership, law and legal matters, multicultural issues, as well as community and police relations. Also includes academic and proficiency skill standards required of law enforcement personnel as defined by the Arizona Peace Officer Standards and Training Board (AZ POST).

*Information:* Admission to the Law Enforcement Program is restricted and requires completion of program specific application. Please contact the Public Safety and Emergency Services Institute for enrollment information and assistance.

**LEA 210 Law Enforcement Academy Part II**

23 credit hours, 23 periods (23 lec.)

Continuation of LEA 110. Includes increased proficiency of concepts, techniques, and applications utilized in law enforcement, academic and proficiency skills, effective police testimony techniques, review of the United States Constitution, Arizona Revised Statutes (ARS) Title 13, and common civil and criminal liability facing law enforcement agencies and officers. Also includes academic and proficiency skill standards required of law enforcement personnel as defined by the Arizona Peace Officer Standards and Training Board (AZ POST).

*Prerequisite(s):* LEA 110.

## Library and Information Sciences

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**LIS 120 Beyond Google: Information Literacy and Research Methods**

3 credit hours, 3 periods (3 lec.)

Development of skills needed to find, evaluate, use and communicate information using a wide variety of resources such as print resources, Library databases, internet resources and other sites to understand how they all fit together when doing academic research. Includes Microsoft Office Word, PowerPoint, and Google Docs; becoming more proficient using these tools for academic coursework. Also includes exercises designed to help students become more efficient in research and class assignments to develop lifelong learning skills.

**LIS 150 Social Media and Ourselves**

3 credit hours, 3 periods (3 lec.)

Distinguish how social media sites are influenced and impacted by users, as well as the role of social media in interpersonal relationships. Includes a focus on social media sites and the various implications and functions of social media in contemporary times. Also includes the study of new media taking place across disciplinary divides and from multiple theoretical perspectives.

## Literature

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**LIT 224 Southwestern Literature**

3 credit hours, 3 periods (3 lec.)

Reading of Mexican-American/Chicano, American Indian, and Anglo writers of the Southwest. Includes short stories, novels, poetry, and creative non-fiction. Also includes relevant comparisons of social, political, and environmental themes in different cultures.

*Prerequisite(s):* WRT 102 or 108.

*Information:* Faculty approval is required to waive prerequisites.

**LIT 225 Science Fiction Literature**

3 credit hours, 3 periods (3 lec.)

Survey of science fiction work from the nineteenth through the twenty-first centuries in a variety of forms and media. Includes the development and components of the genre, its subgenres, and critical analysis of science fiction literary works. Also includes the role of technology and social issues in science fiction.

**LIT 231 Introduction to Shakespeare**

3 credit hours, 3 periods (3 lec.)

Investigation of a number of Shakespeare's major works. Includes sonnets, comedies, histories, and tragedies. Also includes history, social and cultural conditions, literary background, staging, and writing.

*Prerequisite(s):* WRT 102 or 108.

**LIT 261 Modern Literature**

3 credit hours, 3 periods (3 lec.)

Critical analysis of literature of the modern period and from a variety of nations and cultures. Includes analyzing literary texts for meaning and form, understanding the contexts of literature, and writing about literature. Also includes selections from various literary genres, which may include fiction, drama, and poetry, as well as other literary forms. Also includes additional Honors content.

*Prerequisite(s):* WRT 102 or WRT 108

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.

**LIT 261HC Modern Literature: Honors**

3 credit hours, 3 periods (3 lec.)

Critical analysis of literature of the modern period and from a variety of nations and cultures. Includes analyzing literary texts for meaning and form, understanding the contexts of literature, and writing about literature. Also includes selections from various literary genres, which may include fiction, drama, and poetry, as well as other literary forms. Also may include the following honors content: intensive research using highest standards and best practices for the discipline, a significant number/variety of readings of both primary and secondary sources, a "publishable quality" peer reviewed paper or project in format appropriate for this discipline, and a presentation of research, either in class or to a wider audience.

*Prerequisite(s):* WRT 102 or WRT 108

*Information:* Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

**LIT 262 American Poets**

3 credit hours, 3 periods (3 lec.)

Study of the voices and visions of American poets. Includes American poetic visions, distinct styles and voices of poets, and writing assignments.

*Prerequisite(s):* WRT 102 or 108.

**LIT 265 Major American Writers**

3 credit hours, 3 periods (3 lec.)

Survey of selected works by major American authors from the colonial period to the present. Includes extensive writing and reading and emphasizes relating works to their social and historical contexts. Also includes analysis of literary texts of various genres, such as poetry, drama and fiction, for meaning and form.

*Prerequisite(s):* WRT 102 or 108.

**LIT 280 Introduction to Literature**

3 credit hours, 3 periods (3 lec.)

Critical analysis of literature from a variety of nations and cultures. Includes analyzing literary texts for meaning and form, understanding the contexts of literature, and writing about literature. Also includes selections from various literary genres, which may include fiction, drama, and poetry, as well as other literary forms.

*Prerequisite(s):* WRT 102 or WRT 108.

**LIT 289 Literature and Film**

3 credit hours, 3 periods (3 lec.)

Criticism of film's dramatic forms, elements and genres. Includes development of film as an art form, comparative approaches to literature and film, performed drama, critical analysis and film production personnel.

*Prerequisite(s):* WRT 102 or 108.

**LIT 289HC Literature and Film: Honors**

3 credit hours, 3 periods (3 lec.)

Criticism of film's dramatic forms, elements and genres. Includes development of film as an art form, comparative approaches to literature and film, performed drama, critical analysis and film production personnel. Also includes additional Honors content.

*Prerequisite(s):* WRT 102 or WRT 108.

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.



# Logistics and Supply Chain Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

## LGM 101 Principles of Logistics and Supply Chain Management

3 credit hours, 3 periods (3 lec.)

Introduction to the field of logistics and supply chain management. Includes development of logistics systems, careers in logistics, distribution planning, supply chain security, and customer service. Also includes roles and functions of: purchasing, inventory control, physical distribution, warehousing, transportation methods, packaging, and customs.

## LGM 102 Inventory Control

3 credit hours, 3 periods (3 lec.)

A study of inventory control concepts and techniques. Includes, cost concepts, determining size and nature of inventory, forecasting, and inventory planning and control. Also includes ordering methods, controlling pilferage, and matching customer demand with supply.

*Prerequisite(s):* MAT 086 with a C or better or MAT 089A through Module 22 or required score on the Mathematics assessment test.

## LGM 103 Contracts and Freight Claims

3 credit hours, 3 periods (3 lec.)

A study of the considerations involved in the drafting and negotiation of freight and logistics contracts, and of loss avoidance and mitigation in transit. Includes legal and regulatory requirements applicable to contracts for product transportation, and logistics functions and considerations for drafting and negotiating contracts with freight carriers, warehousemen and other logistics service providers. Also includes customer satisfaction, claim preparation, filing procedures, and claim dispute resolution.

## LGM 104 Computerized Logistics

3 credit hours, 4 periods (2 lec., 2 lab)

Analysis of the use of computers in the logistics industry and an introduction to available logistics software. Includes the need for computers, the history and future of computers in the logistics industry, and the impact of computers on customer service. Also includes logistics software availability, selection and implementation, and security measures.

## LGM 105 Warehouse Management

3 credit hours, 3 periods (3 lec.)

Survey of warehouse function, process, organization and operations. Includes analysis of warehouse location, operation, and management. Also includes controls and procedures, financial analysis, security, cargo/materials handling, and productivity.

## LGM 106 Transportation and Traffic Management

3 credit hours, 3 periods (3 lec.)

A study of the domestic freight transportation system. Includes demand for freight movement, laws, regulations, pricing, and policies. Also includes traffic management, customer service, security, and international transportation issues.

## LGM 107 Introduction to Purchasing

3 credit hours, 3 periods (3 lec.)

Survey of basic purchasing functions. Includes establishing requirements and quantities, developing policies and procedures for purchasing, making purchasing decisions, receiving acceptable goods, arranging packaging and shipping, and managing inventory levels.

## LGM 108 International Logistics

3 credit hours, 3 periods (3 lec.)

An introduction to the role of logistics in global business. Includes the economic and service characteristics of international transportation providers, the government's role, documentation and terms of sale used in global business, and the fundamentals of effective export and import management.

## LGM 109 Readiness Skills for Logistics Careers

1 credit hour, 1 periods (1 lec.)

Development of career and learning goals. Includes learning and the world of work, careers in Logistics, and skill development in context. Also includes a focus on the common requirements of all jobs, the skills basic to employment success, and the formal and informal learning necessary for career advancement.

**LGM 190 Logistics and Supply Chain Internship**

3 credit hours, 11 periods (1 lec., 10 lab)

Culmination of logistics program. Includes guidelines and procedures for workplace learning, application of learned concepts on the job. Also includes initiation, management, and completion of capstone project.

*Information:* Consent of instructor is required before enrolling in this course. Students must complete 125 hours at a program-approved employer worksite.

**LGM 196 Independent Study in Logistics and Supply Chain Management**

3 credit hours, 3 periods (3 lec.)

Independent study projects or applied special interest projects in logistics and supply chain management under the supervision of a faculty member.

*Prerequisite(s):* LGM 101 and either LGM 105, 106, or 107.

*Information:* Consent of instructor is required before enrolling in this course.

## Machine Tool Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MAC 100 Introduction to Machine Tool**

3 credit hours, 3 periods (3 lec.)

Principles and procedures for basic machine tool operations. Includes careers in manufacturing, machine tool history, safety, materials, manufacturing process planning, measurement, layout tools and procedures, principles of metal cutting, bench and hand tools, power saws, drill presses, and abrasive machine.

**MAC 110 Manual Machine Shop**

4 credit hours, 6 periods (2 lec., 4 lab)

Introduction to basic machine shop practices. Includes safety, lathes, vertical milling machines, and grinding machines.

*Prerequisite(s):* MAC 100.

*Information:* MAC 100 and 110 may be taken concurrently.

**MAC 120 Machine Shop**

4 credit hours, 6 periods (2 lec., 4 lab)

Instruction and applied practices of advanced manual machining procedures. Includes a more in-depth application of safety, lathe usage, vertical milling machines, and outside diameter (OD) grinding machines.

*Prerequisite(s):* MAC 110 or equivalent with department advisor approval.

**MAC 125 Inspection Quality Assurance**

4 credit hours, 6 periods (2 lec., 4 lab)

Principles and applications of dimensional measurement. Includes line graduated measuring instruments, fixed gages, gage blocks, comparative measurements, optical comparators and projectors, angle measurement, straightness, flatness, and perpendicularity measurement, and coordinated measuring machines.

*Prerequisite(s):* GTM 105 and MAC 100.

*Information:* Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

**MAC 130 Machine Setup and Fixture Making**

3 credit hours, 5 periods (1 lec., 4 lab)

Applied setup of manual machining techniques and related skill sets to produce various part fixtures. Includes translating blueprints into machine setup and fixture making.

*Prerequisite(s):* MAC 110.

*Information:* Prerequisite(s) may be waived with faculty approved industry experience.

**MAC 140 Introduction to Electrical Discharge Machining**

4 credit hours, 6 periods (2 lec., 4 lab)

Applications for electrical discharge machining (EDM). Includes EDM machines, processes, spark generation, dielectric fluids, manufacturing of electrodes, and surface finishes.

*Prerequisite(s):* MAC 110.

*Information:* Prerequisite(s) may be waived by faculty approved industry experiences.

**MAC 150 Computer Numerical Control (CNC) Mill Programming I**

4 credit hours, 6 periods (2 lec., 4 lab)

Setup operations and programming procedures for automated machining systems. Includes Computer Numerical Control (CNC) machining system, positioning and coordinate systems used in CNC programming, part programming, diagnosis and correction of programming errors, and programming procedures with finished part inspection.

*Prerequisite(s):* GTM 105.

*Recommendation:* Completion of CAD 117 before enrolling in this course.

**MAC 155 Computer Numerical Control (CNC) Mill Programming II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of MAC 150 programming instruction. Includes a review of Computer Numerical Control (CNC), mill programming, diagnosis and correction of programming errors, advanced programming techniques used in production and prototype machining, introduction to lathe programming, and introduction to sub-programming.

*Prerequisite(s):* MAC 150.

*Information:* Prerequisite(s) may be waived with industry experience and faculty approval.

**MAC 160 Computer Numerical Control (CNC) Lathe Programming**

4 credit hours, 6 periods (2 lec., 4 lab)

Operations and procedures for Computer Numerical Control (CNC) Lathe. Includes review of CNC concepts and programming, diagnosis and correction of programming errors, advanced programming for CNC Lathes, and introduction to Computer Aided Manufacturing (CAM) programs.

*Prerequisite(s):* GTM 105 and MAC 150.

*Information:* Prerequisites may be waived with industry experience and faculty approval.

**MAC 245 Wire Electrical Discharge Machining and Programming**

4 credit hours, 6 periods (2 lec., 4 lab)

Operations and procedures for 5 axis Electrical Discharge Machining (EDM) computer numerical control (CNC) machining. Includes wire EDM, EDM operating processes, EDM machine functions, EDM manual part programming, and EDM machining operations with the usage of computer-aided machining (CAM) software.

*Prerequisite(s):* MAC 140 and 257.

**MAC 257 Computer-Aided Machining CAM I**

4 credit hours, 6 periods (2 lec., 4 lab)

Computer-Aided Machining (CAM) I Programming of Computer Numerical Control (CNC) machines using Computer-Aided Manufacturing (Mastercam) software. Includes a review of CNC and Computer-Aided Drafting (CAD), introduction to a CAM environment, creating geometry, operating manager, and code generation.

*Prerequisite(s):* MAC 155.

*Information:* Prerequisite(s) may be waived with industry experience with faculty approval.

**MAC 258 Computer Aided Machining (CAM) II**

4 credit hours, 6 periods (2 lec., 4 lab)

Continuation of MAC 257. Includes profile surface, 3D surfaces, editing surfaces and preparing geometry for wire part.

*Prerequisite(s):* MAC 257.

**MAC 259 Computer Aided Machining (CAM) III: Solid Modeling**

4 credit hours, 7 periods (1 lec., 6 lab)

Continuation of MAC 258. Includes profile surfaces of tool path, solid model features in three-dimension (3-D), and editing solid model surfaces.

*Prerequisite(s):* MAC 258.

**MAC 275 Applied Metallurgy**

4 credit hours, 6 periods (2 lec., 4 lab)

Application of metallurgical concepts, procedures, and testing. Includes materials, alloy classification systems, industrial and manufacturing concepts, properties and testing, and industrial and manufacturing processes and applications.

*Prerequisite(s):* GTM 105.

**MAC 296 Machine Tool Independent Projects**

1-4 credit hours, 3-12 periods (3-12 lab)

Independent machine tool projects. Includes producing prints that become skill set completed projects with setup of machines to part completion.

*Prerequisite(s):* MAC 110.

*Information:* May be taken sixteen times for a maximum of sixteen credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. Consent of instructor must be obtained before enrolling in this course.

## Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MGT 110 Human Relations in Business and Industry**

3 credit hours, 3 periods (3 lec.)

Examination of human relations as it relates to business and industry. Includes the roles of the employees, supervisors, and management. Also includes management concepts and functions, communication, leadership, managing change and stress, human motivation, creativity, diversity and culture, and decision making.

**MGT 122 Supervision**

3 credit hours, 3 periods (3 lec.)

Theories and concepts of supervision. Includes the role of the supervisor, management concepts and functions, communication, managing change and stress, human motivation, building relationships, supervision of groups, leadership and management styles, selection, orientation, training, appraisal, and discipline. Also includes complaints, grievances, working with the union, security, safety, and health at work.

*Recommendation:* It is recommended that students complete MGT 110 before enrolling in this course.

*Information:* This course consists of study and application. The student will first review all of the major concepts in supervision. The student will then utilize all of the major concepts presented to examine and evaluate a series of case studies. At the end of the course, a final and cumulative case study will be evaluated.

**MGT 124 Small Business Management**

3 credit hours, 3 periods (3 lec.)

Analysis of the practical problems of organizing, managing and starting a small business. Includes introduction and overview, selecting employees, forms of ownership, managing the business, business plan, pricing, managing cash flow, creating sales forecast, income statements, breakeven analysis, source of funds, international operations, contract, risk, and international opportunities.

**MGT 130 Retail Analysis**

3 credit hours, 3 periods (3 lec.)

Overview of retail analysis that emphasizes the financial performance and standards used within the retailing industry. Includes the fundamentals of business analysis and managing the company's strategic service direction with a focus on the company's business model and its strategic performance. Also includes customer/supplier interactions, quality indicators, cash and profit, fundamentals of business analysis, financial literacy and transparency signs, and service quality benchmarking process.

*Recommendation:* Completion of ACC 211 and MKT 139 before enrolling in this class.

**MGT 135 International Management**

3 credit hours, 3 periods (3 lec.)

Overview of concepts and techniques for international management. Includes topics in international management such as cultural and ethical issues faced by managers in the international marketplace. Also includes the functional areas of international business such as human resources, communication, culture, and business practices.

**MGT 230 Dynamics of Leadership**

3 credit hours, 3 periods (3 lec.)

Overview of the theoretical and applied foundations of leadership. The theoretical component includes the historical and contemporary theories and models of leadership, effective followership, multiculturalism, and ethics. The applied component includes the importance and use of vision and mission, inclusive leadership practices, responding to change, developing a personal philosophy of leadership, and creating a personal profile of strengths and assets. Communication and facilitation skills will be practiced with the completion of a leadership project.

*Information:* Same as STU 230.

**MGT 270 Computer Applications for Managers**

3 credit hours, 3 periods (3 lec.)

Development of management skills in computer applications for business. Includes state of computing technology, electronic commerce and the economy, international issues, work and the virtual workplace, project management, and presentations.

*Recommendation:* Completion of CIS/CSA 104 Computer Fundamentals or proficiency with Microsoft Office software before enrolling in this course.

**MGT 276 Human Resources**

3 credit hours, 3 periods (3 lec.)

Practical aspects of personnel management and support. Includes roles and concepts, acquiring human resources, administering the personnel program, developing employee potential, employee retention, equal employment opportunities, staffing and training, labor relations, and future outlook for personnel management.

*Recommendation:* Completion of BUS 100 before enrolling in this course.

**MGT 280 Business Organization and Management**

3 credit hours, 3 periods (3 lec.)

Overview of the functions performed and issues faced by managers in business. Includes managers and management, the managerial environment, planning and decision support systems, project management, managerial control, and leadership. Also includes motivation and performance, control, and creating and sustaining high performance teams.

*Recommendation:* Completion of BUS 100 and any other MGT course before enrolling in this course.

## Marketing

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MKT 100 Customer Service Skills**

3 credit hours, 3 periods (3 lec.)

Overview of the behavior exhibited by successful customer service professionals featuring simulated business settings. Includes conventional behaviors of the workplace, professional communication in the customer service setting, grooming and clothing for a business setting, telephone and email service, effective answers to sales questions, punctuality and the work ethic, professionalism in the workplace, basic qualitative activities, behavior with co-workers, customer service challenges, exceptional customer service, and career advancement strategies in customer service.

**MKT 105 Retail Math**

3 credit hours, 3 periods (3 lec.)

Develop merchandising and purchasing policies, procedures, concepts, practices and formulas used in retailing with an emphasis on retail mathematics. Includes how to apply a six-month stock and sales plan setting for retail business.

*Prerequisite(s):* Within the last three years: MAT 086 with a C or better or MAT 089A through module 15 or required score on the Mathematics assessment test.

**MKT 111 Principles of Marketing**

3 credit hours, 3 periods (3 lec.)

Introduction to marketing communication, principles, and strategies. Includes global diversity in the marketing environment, product classification, pricing considerations, distribution of products/services, and promotion using traditional and social media strategies.

**MKT 113 Salesmanship**

3 credit hours, 3 periods (3 lec.)

Basic principles and techniques of selling and their practical application. Includes selling as a profession, preparation for relationship selling, the selling process, and planning and managing a sales territory.

**MKT 125 Advertising**

3 credit hours, 3 periods (3 lec.)

Advertising principles and concepts as applied in a business setting. Includes advertising perspectives, developing marketing and advertising strategies, creating advertisements and commercials, and advertising media mix.

**MKT 139 Retailing**

3 credit hours, 3 periods (3 lec.)

Business activities of selling goods and services to final customers. Includes overview of the industry of retailing, environmental framework, consumer demographics and behavior, retail outlet characteristics, the retailing mix, retail information and control systems, the changing nature of retailing, and retailing careers.

**MKT 140 Fashion Merchandising**

3 credit hours, 3 periods (3 lec.)

Overview of enterprises involved in clothing and accessories. Includes design, production, and sourcing of fashion; marketing, distribution, and the fashion consumer; different silhouettes of apparel and textile characteristics, methods of research for retailing, careers in fashion merchandising, and case studies. Also includes a managerial perspective on apparel product quality and profit in a retail setting.

**MKT 196 Independent Study in Marketing and Business**

.5-3 credit hours, 1.5-9 periods (1.5-9 lab)

Student independently continue their studies in Marketing and Business under the supervision of a faculty member.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of nine credit hours.

**MKT 240 Fashion Merchandising Planning and Control**

4 credit hours, 4 periods (4 lec.)

Survey of analytical skills for the process of merchandising. Includes evaluation of merchandise in clothing sales, merchandise planning, developing the presentation of apparel lines, and finalizing apparel lines through merchandising and budget review. Also includes the application of Web PDM.

*Prerequisite(s):* MKT 140.

**MKT 290 Apparel Merchandising Internship**

3 credit hours, 15 periods (15 lab)

Volunteer apparel merchandising field experience at an approved work site. Includes development of a business plan, retail strategies, internship goals and evaluation, and report of day-to-day operations.

*Prerequisite(s):* MKT 240.

*Information:* Enrollment and placement contingent upon earned grade point average for students in their final semester of the Apparel Merchandising program. Application and acceptance required.

## Mathematics

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MAT 082 Basic Mathematics**

3 credit hours, 3 periods (3 lec.)

Fundamentals and applications of arithmetic. Includes operations on whole numbers, fractions, decimal numbers, ratio and proportion, percent, and measurement.

**MAT 086 Prealgebra**

3 credit hours, 3 periods (3 lec.)

Transition from arithmetic to algebra. Includes signed numbers, commutative, associative, and distributive laws, order of operations, algebraic expressions, polynomials, fractions, and linear equations. Also includes percents, ratio and proportion, graphing, perimeter, area, volume, and optional topics.

*Prerequisite(s):* Within the last three years: MAT 082 with a C or better or required score on the Mathematics assessment test.

*Information:* Access to a scanner required for Math class taken online.

ake this course more than once. To earn a passing grade, students must successfully complete a minimum of 9 modules.

**MAT 089A Foundational Studies in Mathematics**

3 credit hours, 3 periods (3 lec.)

Fundamentals and applications of basic math, elementary algebra, and intermediate algebra.

*Information:* The course content is offered in 35 modules which are divided between MAT 089A and MAT 089B. They are computer delivered in a structured, individualized learning environment with on-demand instruction assistance. Attendance at regularly scheduled classes is required. The course may be taken two times for a maximum of six credit hours. To earn a passing grade, students must successfully complete a minimum of 9 modules. You must complete a minimum of 18 modules in MAT 089A before enrolling in MAT 089B.



**MAT 089B Foundational Studies in Mathematics II**

3 credit hours, 3 periods (3 lec.)

Continuation of the fundamentals and applications of basic math, elementary algebra, and intermediate algebra.

*Prerequisite(s):* MAT 089A.

*Information:* The course content is offered in 35 modules which are divided between MAT 089A and MAT 089B. They are computer delivered in a structured, individualized learning environment with on-demand instruction assistance. Attendance at regularly scheduled classes is required. The course may be taken two times for a maximum of six credit hours. To earn a passing grade, students must successfully complete a minimum of 9 modules. You must complete a minimum of 18 modules in MAT 089A before enrolling in MAT 089B.

**MAT 092 Elementary Algebra**

3 credit hours, 3 periods (3 lec.)

Introduction to basic algebra. Includes translating written statements into algebraic expressions, linear equations, linear inequalities, graphing, integer exponents, and polynomials. Also includes factoring, simple rational expressions, square roots, quadratic equations, and optional topics.

*Prerequisite(s):* Within the last three years: ICS 081 with a grade of B or better, MAT 086 with a grade of C or better or completion of module 22 in MAT 089A or 089B, or satisfactory score on the Mathematics assessment test.

**MAT 095 Pre-College Algebra**

5 credit hours, 5 periods (5 lec.)

Basic and intermediate algebra concepts. Includes translating written statements into algebraic expressions, linear equations, linear inequalities, graphing, integer exponents, and polynomials. Also includes factoring, rational and radical expressions and equations, square roots, quadratic equations, functions, exponential and logarithmic expressions.

*Prerequisite(s):* Within the last three years: ICS 081 with an A, or MAT 086 with a B or better, or completion of module 22 in MAT 089A or MAT 089B, or required score on the Mathematics assessment test.

*Information:* Access to a scanner required for Math classes taken online.

**MAT 097 Intermediate Algebra**

3 credit hours, 3 periods (3 lec.)

Definition of function and function notation, compound inequalities in one variable, graphs of linear inequalities in two variables, and absolute value equations and inequalities. Also includes rational and radical functions and equations, quadratic functions and their graphs, exponential functions and their graphs, and logarithms.

*Prerequisite(s):* Within the last three years: MAT 092 with a grade of C or better, or completion of module 25 in MAT 089A or MAT 089B, or satisfactory score on the Mathematics assessment test.

*Information:* The online sections for the course require students to have the ability to share (electronically) handwritten work within the course. Offer: Fall, Spring, Summer.

**MAT 106 Elementary Data Analysis with Spreadsheets**

2 credit hours, 2 periods (2 lec.)

Introduction to statistics. Includes the collection and presentation of data, statistical measures, algebra topics, Excel topics, and data analysis topics.

*Prerequisite(s):* Within the last three years with a grade of C or better: ICS 081, or MAT 086, or MAT 089A through Module 15, or required score on the Mathematics assessment test.

**MAT 108 Practical Geometry and Trigonometry**

2 credit hours, 2 periods (2 lec.)

Fundamentals of geometry and trigonometry with applications. Includes basic geometric properties, properties of triangles, Pythagorean Theorem and special triangles, polygons, circles, volumes, radian measure, trigonometric functions, and oblique triangles.

*Prerequisite(s):* Within the last three years with a grade of C or better: ICS 081, or MAT 086, or MAT 089A through Module 15, or required score on the Mathematics assessment test.

**MAT 122Z Intermediate Algebra**

3 credit hours, 3 periods (3 lec.)

Basic algebraic functions. Includes lines in the plane, systems of linear equations, inequalities, polynomials, rational expressions and equations, radical expressions and equations. Also includes quadratic equations, literal equations, exponents, logarithms, functions, and optional topics.

*Information:* Upon completion of all modules of MAT 089, students will have met all of the competencies of MAT 122 and will receive credit equivalent to MAT 122Z. No more than 3 credit hours can be applied toward graduation for MAT 122, 122Z, and/or 123.

**MAT 123 Pre-College Algebra**

5 credit hours, 5 periods (5 lec.)

Basic and intermediate algebra concepts. Includes translating written statements into algebraic expressions, linear equations, linear inequalities, graphing, integer exponents, and polynomials. Also includes factoring, rational and radical expressions and equations, square roots, quadratic equations, functions, exponential and logarithmic expressions.

*Prerequisite(s):* Within the last three years: MAT 086 with a B or better or required score on the mathematics assessment

*Information:* No more than 3 credit hours can be applied toward graduation for MAT 122, 122Z and/or 123. Access to a scanner required for Math classes taken online. Not a university level course.

**MAT 141 Topics in College Mathematics**

4 credit hours, 4 periods (4 lec.)

Survey of mathematical topics and applications. Includes application of probability, statistics, finance, and growth models.

*Prerequisite(s):* Within the last three years: MAT 092 with a C or better or completion of module 25 in MAT 089A or 089B or required score on the Mathematics assessment exam.

**MAT 142 Topics in College Mathematics**

3 credit hours, 3 periods (3 lec.)

Survey of mathematical topics and applications. Includes application of mathematics to the social services, management science, growth, and probability and statistics.

*Prerequisite(s):* Within the last three years: MAT 095 or 097 or 122 or 122Z or 123 with a C or better or required score on the mathematics assessment exam.

**MAT 145 Mathematics for Game Design**

4 credit hours, 4 periods (4 lec.)

Survey of mathematical topics and applications as applied to game design. Includes 2D and 3D geometry, geometric symmetry, trigonometry, vectors, logic, probability, statistics, and problem solving.

*Prerequisite(s):* Within the last three years: MAT 095 or 097 or 122 or 122Z or 123 with a C or better, or satisfactory score on the Mathematics assessment exam.

**MAT 146 Mathematics for Elementary Teachers I**

3 credit hours, 3 periods (3 lec.)

An overview of mathematical concepts, principles and applications specifically for elementary teachers. Includes real number properties and patterns, arithmetic operations and algorithms in subsets of real numbers, alternative numbers systems, set theory, and algebraic reasoning and problem solving. Also includes the technology to teach mathematics.

*Prerequisite(s):* Within the last three years: MAT 142 or 151 or higher with a C or better, or mathematics assessment into MAT 167 or higher.

*Information:* Access to a scanner required for math classes taken online.

**MAT 147 Mathematics for Elementary Teachers II**

3 credit hours, 3 periods (3 lec.)

Continuation of MAT 146. Includes measurement, basic geometry, probability, and statistics. Also includes the technology to teach mathematics.

*Prerequisite(s):* Within the last three years: MAT 146 with a C or better.

*Information:* Access to a scanner required for math classes taken online.

**MAT 151 College Algebra**

4 credit hours, 4 periods (4 lec.)

Introduction to college-level algebra. Includes functions, exponential and logarithmic functions, linear 2x2 and higher systems, graphing, and calculator use. A graphing calculator is required.

*Prerequisite(s):* Within the last three years: MAT 095 or 097 or 122 or 122Z or 123 with a C or better, or or required score on the Mathematics assessment test.

*Information:* Credit for only one course will be awarded to students completing MAT 151 and MAT 188. See course description or advisor to choose your best option. No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 182, 187, 188, and 189. A graphing calculator is required. See your instructor for details. Access to a scanner required for math classes taken online.

**MAT 167 Introductory Statistics**

3 credit hours, 3 periods (3 lec.)

Introduction to statistics. Includes the nature of statistics, quantitative data, probability, probability distributions and the central limit theorem. Also includes estimates for population parameters, hypothesis testing, correlation with regression, and additional topics with choices from chi square distribution, ANOVA and/or nonparametric methods.

*Prerequisite(s):* Within the last three years: MAT 151 with a C or better, or required score on the Mathematics assessment test.

*Information:* Use of a graphing calculator and/or computer programs may be required at the discretion of the instructor. Access to a scanner required for math classes taken online.

**MAT 172 Finite Mathematics**

3 credit hours, 3 periods (3 lec.)

Sampling of finite mathematics which includes mathematics of finance, linear business functions, systems of equations, matrices, geometric and simplex methods of solving linear programming problems, logic, sets, combinatorics, basic probability, probability distributions, and Markov chains.

*Prerequisite(s):* Within the last three years: C or better in MAT 151 or satisfactory score on the mathematics assessment exam.

**MAT 182 Trigonometry**

3 credit hours, 3 periods (3 lec.)

Introduction to trigonometric functions. Includes graphs, identities, angle measure, vectors, polar coordinates, and conic sections.

*Prerequisite(s):* Within the last three years: MAT 151 with a C or better or required score on the Mathematics assessment test.

*Information:* This course will no longer be offered as of Spring 2016. Students currently enrolled in MAT 151 and needing to complete the precalculus sequence should do so prior to Spring 2016. Credit for only one course will be awarded to student completing MAT 182 and MAT 189. See course description or advisor to choose your best option. No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 182, 187, 188, and 189. A graphing calculator is required. See your instructor for details. Access to a scanner required for math classes taken online.

**MAT 188 Precalculus I**

4 credit hours, 4 periods (4 lec.)

College-level algebra. Includes equations, systems of equations, algebraic and transcendental functions, inequalities, sequences and series, and calculator use.

*Prerequisite(s):* Within the last three years: MAT 095 or MAT 097 with a grade of C or better, or required score on the Mathematics assessment test.

*Recommendation:* This course is intended as an intensive preparation for students who plan to continue to Calculus.

*Information:* Credit for only one course will be awarded to students completing MAT 151 and MAT 188. See course description or advisor to choose your best option. No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 182, 187, 188, and 189. A graphing calculator is required for this course and will be used extensively.

**MAT 189 Precalculus II**

3 credit hours, 3 periods (3 lec.)

College-level trigonometry. Includes trigonometric functions, angle measure, graphs, identities, equations, polar coordinates, conic sections, and calculator use. May also include parametric equations, vectors, and complex numbers.

*Prerequisite(s):* Within the last three years: MAT 188 with a grade of C or better, or required score on the mathematics assessment test.

*Recommendation:* This course is intended as an intensive preparation for students who plan to continue with Calculus.

*Information:* No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 188, and 189. A graphing calculator is required for this course and will be used extensively.

**MAT 197 Precalculus Supplemental Seminar**

1 credit hour, 1 periods (1 lec.)

Precalculus inquiry-based problem-solving and applications. Includes mathematical modeling, problem-solving techniques and the Rule of Four: algebraic, contextual, graphical, and numerical representations.

*Prerequisite(s):* Within the last three years: MAT 188 with a C or better, or required score on the Mathematics assessment test.

*Corequisite(s):* MAT 189

*Information:* This course is designed to mirror MATH 196L taught at the University of Arizona.

**MAT 212 Topics in Calculus**

3 credit hours, 3 periods (3 lec.)

Introductory topics in differential and integral calculus to include limits, continuity, differentiation, and integration of functions with particular emphasis on business applications. Microsoft Excel and/or graphing calculators will be used as tools for further understanding of these concepts.

*Prerequisite(s):* Within the last three years: C or better in MAT 151 or satisfactory score on the mathematics assessment exam.

*Information:* A graphing calculator (technology) is required. See your instructor for details.

**MAT 220 Calculus I**

5 credit hours, 5 periods (5 lec.)

Introduction to analytical geometry and calculus. Includes limits and continuity, derivatives, applications of the derivative, and integration.

*Prerequisite(s):* Within the last three years: MAT 187; or MAT 188, and 189 with a C or better; or required score on the Mathematics assessment exam.

*Information:* Students who have completed MAT 151 between Fall 2013 and Summer 2015 and MAT 182 between Fall 2013 and Fall 2015 will have met the prerequisite for MAT 220.

**MAT 220HC Calculus I: Honors**

5 credit hours, 5 periods (5 lec.)

Introduction to analytical geometry and calculus. Includes limits and continuity, derivatives, applications of the derivative, and integration. Also includes additional Honors content.

*Prerequisite(s):* Within the last three years: MAT 187; or MAT 188, and 189 with a C or better; or required score on the Mathematics assessment exam.

*Information:* Students who have completed MAT 151 between Fall 2013 and Summer 2015 and MAT 182 between Fall 2013 and Fall 2015 will have met the prerequisite for MAT 220HC. Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course. Honors Content: Intensive theoretical-based and/or application-based projects using highest standards and best practices for the discipline; team problem solving projects in formats appropriate for this discipline: presentation of results, in class or to a wider audience.

**MAT 227 Discrete Mathematics in Computer Science**

4 credit hours, 4 periods (4 lec.)

Mathematical concepts applicable to computer science. Includes logic, set theory, counting techniques, proof techniques, relations and functions, binary relations, big-oh notation, mathematical induction, and recursion.

*Prerequisite(s):* Within the last three years: MAT 220 or higher with a C or better.

*Recommendation:* Completion of CIS 129 or programming experience is recommended prior to enrolling in this course.

**MAT 231 Calculus II**

4 credit hours, 4 periods (4 lec.)

Continuation of MAT 220. Includes techniques and applications of integration, numerical integration, improper integrals, sequences, infinite series, polar coordinates, parametric equations, and other related topics.

*Prerequisite(s):* Within the last three years: MAT 220 with a C or better.

**MAT 231HC Calculus II: Honors**

4 credit hours, 4 periods (4 lec.)

Continuation of MAT 220. Includes techniques and applications of integration, numerical integration, improper integrals, sequences, infinite series, polar coordinates, parametric equations, and other related topics. Also includes additional Honors content.

*Prerequisite(s):* Within the last three years: MAT 220 with a C or better.

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive theoretical-based and/or application-based projects using highest standards and best practices for the discipline. Also may include team problem solving projects in formats appropriate for the discipline with results presented in class or to a wider audience.

**MAT 241 Calculus III**

4 credit hours, 4 periods (4 lec.)

Continuation of MAT 231. Includes vectors in two and three dimensions, vector-valued functions, differentiation and integration of multivariable functions, and calculus of vector fields.

*Prerequisite(s):* Within the last three years: MAT 231 with a grade of C or better.

**MAT 252 Introduction to Linear Algebra**

3 credit hours, 3 periods (3 lec.)

Introduction to vector spaces and linear transformations. Includes systems of linear equations, vector spaces, inner product spaces, matrices, and linear transformations.

*Prerequisite(s):* Within the last three years: MAT 231 with a C or better.

**MAT 262 Differential Equations**

3 credit hours, 3 periods (3 lec.)

Introduction to differential equations. Includes first order differential equations, higher order differential equations, systems of linear differential equations, Laplace transforms, and approximating methods. Also includes applications.

*Prerequisite(s):* Within the last three years: MAT 231 with a C or better.

**MAT 296 Independent Studies in Mathematics**

1-4 credit hours, 1-4 periods (1-4 lec.)

Independent studies and projects in mathematics. Content to be determined by conference between student and instructor.

*Information:* Consent of a sponsoring instructor must be obtained before registering in this class.

## Medical Assistant

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MDA 120 Medical Assistant Profession**

2 credit hours, 2 periods (2 lec.)

Overview of the medical assistant profession including the role of patient navigator and effective communication. Includes legal implications for the medical assistant, scope of practice, standard of care, and legal terminology. Also includes an overview of ethics, morals, and the effect of personal ethics on professional behaviors.

**MDA 121 Medical Assistant Skills for Success**

2 credit hours, 2 periods (2 lec.)

Professional and personal success tools, skills, and resources for medical assistants. Includes exploration of career options, job search skills, and portfolio development. Also includes wellness and safety, critical thinking, time management, stress management, self-esteem, gender awareness, assertiveness training, and the investigation of useful community resources.

**MDA 122 Medical Assistant Clinical Care**

2 credit hours, 4 periods (1 lec., 3 lab)

Multi-discipline approach to patient care. Includes asepsis, phlebotomy, electrocardiograms, dressing care, specimen collection and handling, urinalysis, whole blood hematology, glucose monitoring, and cholesterol and coagulation testing. Also includes principles of medication with an emphasis on oral and parenteral routes of drug administration. Also includes legal and ethical standards, and compliance with Occupational Health and Safety Administration (OSHA) and Clinical Laboratory Improvement Amendments (CLIA) regulations.

**MDA 123 Medical Assistant Clinical Procedures**

3 credit hours, 5 periods (2 lec., 3 lab)

Principles and procedures for the medical assistant. Includes methods of assisting clinicians with physical examinations, procedures, treatments, and minor surgical procedures in the medical office. Also includes collecting vital signs; height, weight, and other patient data; and appropriate documentation for the completion of patient histories.

**MDA 124 Medical Terminology for Health Care Workers**

2 credit hours, 2 periods (2 lec.)

Medical terminology used in health care, including descriptions of special care populations, specialty services, and communication. Encompasses a body systems approach to terms as they relate to structures, functions, diseases, procedures, and diagnostic tests. Also includes medical abbreviations, symbols, spelling, building, and analyzing medical terms.

**MDA 125 Orientation to ICD-10-CM and CPT Coding**

3 credit hours, 3 periods (3 lec.)

An introduction to the International Classification of Diseases - 10th Edition (ICD-10-CM), Current Procedural Terminology (CPT Category I) and Healthcare Common Procedure Coding System (HCPCS Level II) for Medical Assistants. Includes the process of accurate code selection using data abstracted from medical records and subsequent application of guidelines, modifiers and conventions to code to the highest level of specificity. Also includes legal implications and ethical considerations related to coding for reimbursement in the healthcare industry.

**MDA 126 Medical Billing and Insurance for Medical Assistants**

3 credit hours, 3 periods (3 lec.)

Introduction to the role of the Medical Assistant to the processes and procedures related to health insurance plans in an ambulatory care environment. Includes the principles of bookkeeping, billing, accounting, and banking. Also includes the requirements for completing and submitting claims forms.

*Recommendation:* Minimum of 25 words per minute word processing skills.

**MDA 127 Administrative Procedures for Medical Assistants**

3 credit hours, 5 periods (2 lec., 3 lab)

Principles, guidelines, and procedures for professional front office administration performed by the Medical Assistant. Includes the use of electronic technology for appointment scheduling, documenting, filing, and medical records data collection and management. Also includes a broad range of verbal and nonverbal communication techniques to assist Medical Assistants in addressing the needs of a diverse patient population.

**MDA 128 Medical Billing and Insurance for Medical Assistants**

2 credit hours, 2 periods (2 lec.)

Introduction to the role of the Medical Assistant to the processes and procedures related to health insurance plans in an ambulatory care environment. Includes the principles of bookkeeping, billing, accounting, and banking. Also includes the requirements for completing and submitting claims forms.

*Recommendation:* Minimum of 25 words per minute word processing skills.

**MDA 190A Medical Assistant Front Office Externship**

1 credit hour, 5 periods (5 lab)

Practicum in administrative medical assisting. Application of administrative duties, procedures, and knowledge derived from medical assisting courses.

*Prerequisite(s):* HCA 119, MDA 120, 121, 124, 125, 126 and 127.

*Information:* Permission of the program director is required to enroll in this course.

**MDA 190B Medical Assistant Back Office Externship**

1 credit hour, 5 periods (5 lab)

Practicum in clinical medical assisting. Application of clinical skills, procedures, and knowledge derived from medical assisting courses.

*Prerequisite(s):* HCA 103, 119, MDA 120, 121, 122, 123 and 124.

*Information:* Permission of the program director is required to enroll in this course.

## Medical Laboratory Technician

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MLT 100 Phlebotomy for Medical Laboratory Technology**

2 credit hours, 2 periods (2 lec.)

Theory of basic phlebotomy techniques and procedures. Includes instruction for blood collection, patient care, quality assurance standards, medical terminology, anatomy, blood collection procedures, variables, computers and specimen processing, and point of care (POC) testing.

*Prerequisite(s):* BIO 156IN or 160IN or 201HI or 201IN or 202IN.

*Corequisite(s):* MLT 100LB

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 100IN Phlebotomy for Medical Laboratory Technology**

3 credit hours, 5 periods (2 lec., 3 lab)

Theory and practice of basic phlebotomy techniques and procedures. Includes blood collection for patient care, quality assurance standards, medical terminology, anatomy, blood collection procedures, variables, computers and specimen processing, and point of care (POC) testing.

*Prerequisite(s):* BIO 156IN or 160IN or 201HI or 201IN or 202IN.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course. IN is the integrated version of the course with the lecture and lab taught simultaneously.



**MLT 100LB Phlebotomy for Medical Laboratory Technology Lab**

1 credit hour, 3 periods

Practice of basic phlebotomy techniques and procedures. Includes blood collection for patient care, quality assurance standards, medical terminology, anatomy, blood collection procedures, variables, computers and specimen processing, and point of care (POC) testing.

*Prerequisite(s):* BIO 156IN or 160IN or 201IH or 201IN or 202IN.

*Corequisite(s):*MLT 100

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 199 Introductory Co-op: Phlebotomy Lab Assisting**

1 credit hour, 1 periods (1 lec.)

Principles of job success in a medical lab setting. Includes laboratory workplace skills, communication skills, time and energy management, managing stress, career information, and preparing for employment. Also includes principles, theories, and practices in the career field; and problems in the work situation.

*Prerequisite(s):* MLT 100IN (or 100 and 100LB).

*Corequisite(s):*MLT 199WK

*Information:* Consent of instructor is required before enrolling in this course.

**MLT 199WK Introductory Co-op Work: Phlebotomy Lab Assisting**

1.75 credit hours, 5.25 periods (5.25 lab)

A supervised cooperative work program for students in an occupation related area. Clinical coordinators work with students and their preceptors in a hospital, clinic laboratory, or outpatient collection station. The student develops competency and improved self-confidence when collecting and processing blood, urine or other body fluid samples in the laboratory workplace.

*Prerequisite(s):* MLT 100IN (or 100 and 100LB).

*Corequisite(s):*MLT 199

*Information:* Consent of instructor is required before enrolling in this course. *Information:* Students complete 79 clock hours of supervised placement at approved work site.

**MLT 200 Urinalysis/Body Fluids**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the fundamental clinical lab techniques of urine and body fluids. Includes collection, physical and chemical examination, microscopic examination, body fluids, and individual fluids.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 211 Hematology**

5 credit hours, 7 periods (4 lec., 3 lab)

The study of red cells, white cells, and platelets looking at structure, formation, and the diseases associated with these cells. Includes types of blood cells, tests, normal and abnormal blood cells, maturation, disease states, hemoglobins, hemoglobinopathies, hemostasis, coagulation, fibrinolytic system, instrumentation, and quality controls and assurance.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 221 Clinical Chemistry**

4 credit hours, 6 periods (3 lec., 3 lab)

Fundamentals of chemistry in a clinical setting. Includes chemical substances, instruments, laboratory procedures, blood and urine chemistry abnormalities, and laboratory instrument computers and information systems.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 231 Immunohematology/Immunology**

5 credit hours, 7 periods (4 lec., 3 lab)

Introduction to basic immunology related to methods utilized in the clinical laboratory. Includes blood collection, blood components, immunology and complement, principles of seriological testing, genetics, blood group systems, antiglobulin testing, gel and solid phase testing, and identification of unexpected antibodies. Also includes neonatal and obstetrical transfusion practice, pre-transfusion compatibility testing, International Society of Blood Transfusion (ISBT) product labeling, adverse effects of blood transfusions, positive direct antiglobulin test (DAT), immune hemolysis, quality assurance, transplantation, and molecular testing.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 251 Clinical Microbiology**

5 credit hours, 9 periods (3 lec., 6 lab)

Introduction to the structure, identification, and control of bacteria. Includes categories and classification of bacteria, ecology and spread of bacteria, pathogenesis of bacterial infections, clinical bacteriology methodology, various organisms, clinically significant anaerobic bacteria, methods in antimicrobial testing, mycobacteria, viruses and other microorganisms, and local disease processes.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 260 Parasitology and Immunology/Serology**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to the basics of mycology and parasitology host relationships and their effects. Includes fungi, medical parasitology, specimen collection, techniques for examination, special techniques, other specimens, detecting and diagnosis of parasitic infections, clinically important parasites, and immunology and serological testing.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

**MLT 299 Advanced Co-op: Medical Laboratory Technician**

1 credit hour, 1 periods (1 lec.)

Comprehensive review of course work to prepare the student for national certifying examinations, provide a forum for discussion of current issues and technologies in clinical laboratory science, and augment the concurrent clinical experience. Students share their experience in the clinical area through discussion of topics of interest and presentation of case studies.

*Prerequisite(s):* MLT 100IN (or 100 and 100LB), 200, 211, 221, 231, 251 and 260.

*Corequisite(s):* MLT 299WK

*Information:* Consent of instructor is required before enrolling in this course.

**MLT 299WK Advanced Co-op Work: Medical Laboratory Technician**

11.5 credit hours, 34.5 periods (34.5 lab)

A supervised cooperative work program for students in an occupation related area. Teacher-coordinators work with students and their supervisors in a hospital or clinic laboratory. The student develops competency and improved self confidence in the laboratory workplace.

*Prerequisite(s):* MLT 100IN (or 100 and 100LB), 200, 211, 221, 231, 251 and 260.

*Corequisite(s):* MLT 299

*Information:* Consent of instructor is required before enrolling in this course. *Information:* Students complete 518 clock hours of supervised placement at approved work site

## Mexican-American Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MAS 105 Introduction to Chicano Studies**

3 credit hours, 3 periods (3 lec.)

Chicano(a) life in historical context since 1848. Includes defining Chicano(a) ideologies and realities from an interdisciplinary perspective. Also includes Chicano(a) history and culture within the world systems of Native Americans, New Spain, Mexico and the United States.

*Information:* Same as HIS 105.

**MAS 127 History and Culture of the Mexican-American in the Southwest**

3 credit hours, 3 periods (3 lec.)

Historical survey of Mexicano(a)/Chicano(a) people from their indigenous origins in Meso-America and the Gran Chichimeca to the present in the United States. Includes historical writings, movements north under Spain and Mexico, repression and resistance. Also covers the political, economic, religious and social movements of the 19th, 20th and early 21st centuries.

*Information:* Same as ANT 127 and HIS 127.

**MAS 201 La Chicana**

3 credit hours, 3 periods (3 lec.)

Interdisciplinary analysis of Chicanas/Mexicanas' status in the United States. Includes Chicana/Mexicana scholarship and Social Justice Movements, and Chicana/Mexicana feminism in the Southwest, Chicana/Mexicana community empowerment, Chicanas/Mexicanas on the U.S.-Mexico border.

*Information:* Same as GWS 201.

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

## MUS 100 Guitar I

2 credit hours, 2 periods (2 lec.)

Development of the principles of guitar playing with emphasis on a variety of styles and guitar repertoire. Includes parts of the guitar, music symbols, tuning, playing position, right and left hand techniques, notes on the first through third strings, notes on the fourth string, thumb technique, chord strumming, and right-hand arpeggio patterns. Also includes notes on the fifth and sixth strings, sharps and flats, twelve (12) bar blues, right hand chord technique, and open position chords.

## MUS 101 Guitar II

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 100. Includes more detailed development of guitar skills, musicianship, sight-reading, repertoire development, ensemble playing, and improvisation.

*Prerequisite(s):* MUS 100.

*Information:* Prerequisites may be waived with consent of instructor.

## MUS 102 Music Fundamentals

3 credit hours, 3 periods (3 lec.)

Introduction to fundamentals of music designed to develop basic literacy in music. Includes definitions and notation, rhythm and meter, intervals, scales and transposition, key signatures, triads, chords and harmony, and simple forms.

*Recommendation:* Students considering music as a major are encouraged to concurrently enroll in MUS 102 and 106.

## MUS 103 Music Theory Review

1 credit hour, 1 periods (1 lec.)

Intensive review of music fundamentals. Includes clefs and basic pitch notation, scales, key signatures, intervals, and triads.

*Information:* May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

## MUS 105 Introduction to Piano (Non Major)

2 credit hours, 2 periods (2 lec.)

Basic principles and techniques of piano playing in a group situation. Includes study of major/minor scales and key signatures, chords, repertoire pieces, and learning and practice methods. Also includes transposition of simple compositions, sight reading, and harmonizations of melodies.

*Information:* Designed for non-music majors.

## MUS 106 Introduction to Ear Training

2 credit hours, 2 periods (2 lec.)

Ear training for individuals with little or no musical background. Includes identification of keys on a piano keyboard and notes on the musical staff, visual and aural recognition of intervals, dictation and performance of rhythmic patterns, and sight singing of melodies. Also includes major and minor key signatures and scales, singing of major and minor scales, intervals, aural identification of individual pitches, and listening to short melodic figures.

*Recommendation:* Students considering music as a major are encouraged to take MUS 102 and 106 concurrently.

## MUS 108 Pima Jazz Band I

2 credit hours, 3 periods (1 lec., 2 lab)

Rehearsal and performance of many styles of music in the jazz idiom. Includes interpretation of jazz literature and its notation, development of mind and body control, interpretation of jazz rhythms through listening, scales, and ensemble techniques.

*Information:* Students chosen by audition. May be taken two times for a maximum of four credit hours.

## MUS 109 Pima Jazz Band II

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of MUS 108. Includes interpretation of jazz literature and its notation, development of mind and body control, interpretation of jazz rhythms, scales, and ensemble techniques.

*Prerequisite(s):* MUS 108.

*Information:* Students chosen by audition. *Information:* May be taken two times for a maximum of four credit hours.

## MUS 111 Exploring Music through Piano

3 credit hours, 3 periods (3 lec.)

Keyboard application skills and music fundamentals. Includes keyboard orientation, tonality, piano proficiency, musical structure, musical texture, musical style, and global topics.

**MUS 116 Pima Community College Orchestra I**

2 credit hours, 3 periods (1 lec., 2 lab)

Progressive development of musical skills through interpretation of orchestra literature. Includes orchestral literature and its interpretation, mind and body control, rhythms, and ensemble performance.

*Information: Students chosen by audition. May be taken two times for a maximum of four credit hours.*

**MUS 117 Pima Community College Orchestra II**

2 credit hours, 3 periods (1 lec., 2 lab)

Continuation of MUS 116. Includes orchestral literature and its interpretation, mind and body control, rhythms, and scales and intervals in ensemble performance.

*Prerequisite(s): MUS 116.*

*Information: Students chosen by audition. Information: May be taken two times for a maximum of four credit hours.*

**MUS 120 Concert Band I**

3 credit hours, 7 periods (1 lec., 6 lab)

Progressive development of musical skills through interpretation of literature. Includes mind and body control, scales, and ensemble performance.

*Information: Students chosen by audition. May be taken two times for a maximum of six credit hours.*

**MUS 121 Concert Band II**

3 credit hours, 7 periods (1 lec., 6 lab)

Continuation of MUS 120. Includes interpretation of literature, mind and body control, scales, and ensemble performance.

*Prerequisite(s): MUS 120.*

*Information: Students chosen by audition. Information: May be taken two times for a maximum of six credit hours.*

**MUS 125 Structure of Music I**

3 credit hours, 3 periods (3 lec.)

Review of music fundamentals. Includes form and analysis, non-harmonic tones and harmonic analysis, simple keyboard-style harmony, figured bass, chord functions, voicing chords, voice leading, part-writing, and seventh chords. Also includes cadences, chords in second inversion, harmonic progression, secondary dominants, and chorale harmonizations.

*Corequisite(s): MUS 127*

*Information: Required for all other music structure courses. Students who are music majors take MUS 125 and 127 concurrently. Music majors must also concurrently enroll in the appropriate level of studio instruction course. Consult a full time music faculty member for additional information.*

**MUS 126 Structure of Music II**

3 credit hours, 3 periods (3 lec.)

Continuation of MUS 125. Includes chromatic harmony and melody, secondary dominants and modulation, seventh and ninth chords, neapolitan and augmented sixth chords, and enharmonic relations. Also includes chromatic mediants and modulation, harmonic sequence, borrowed chords, and technical vocabulary.

*Corequisite(s): MUS 129*

**MUS 127 Aural Perception I**

2 credit hours, 2 periods (2 lec.)

counting rhythms.

*Corequisite(s): MUS 125*

**MUS 129 Aural Perception II**

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 127. Includes aural approaches to diatonic harmony, melody, advanced rhythmic structures, advanced applications for rhythmic dictation, intervallic recognition, and general listening techniques.

*Corequisite(s): MUS 126*

**MUS 130 Chorale (SATB)**

3 credit hours, 4 periods (2 lec., 2 lab)

Selected group of mixed voices for interpretation of a wide variety of styles of music in concerts throughout the academic year. Includes progressive development of musical

*skills through interpretation of literature. Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**MUS 131 College Singers (SATB)**

3 credit hours, 4 periods (2 lec., 2 lab)

Small chorale ensemble. Includes repertory and performance throughout the academic year with the best literature from all styles and periods. Also includes progressive development of musical skills through interpretation of literature.

*Information:* Students chosen by audition. May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUS 136 Voice Class I**

2 credit hours, 2 periods (2 lec.)

Practical training in basic skills and singing without specialization. Includes techniques, group singing, individual practice, and individual performance.

**MUS 141 Piano Class I (Majors)**

2 credit hours, 2 periods (2 lec.)

Beginning instruction utilizing group and individual practice with electronic pianos. Includes scales, chords, repertoire, technique, practice habits, transposition of single-line melodies, and sight reading.

**MUS 142 Piano Class II (Majors)**

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 141. Incorporates intermediate piano instruction utilizing group and individual practice with electronic pianos. Includes scales, chords, harmonization of major and minor melodies with different accompaniment patterns, and transposition of short major and minor pieces. Also includes repertoire, continued technique and practice habits, and sight reading.

*Prerequisite(s):* MUS 141.

**MUS 143 Piano Class III (Majors)**

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 142. Incorporates intermediate piano instruction utilizing group and individual practice with electronic pianos. Includes scales, chords, arpeggios, harmonization of melodies, transpositions, repertoire pieces, technique and practice habits, sight reading, and score reading.

*Prerequisite(s):* MUS 142.

**MUS 144 Piano Class IV (Majors)**

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 143. Incorporates advanced piano instruction utilizing group and individual practice with electronic pianos. Includes scales, arpeggios, learning methods, technique building exercises, memory method, and advanced methods of practicing.

*Prerequisite(s):* MUS 143.

**MUS 148 Musical Theater Workshop**

2 credit hours, 3 periods (1 lec., 2 lab)

Movement and singing to enhance projection and communication capabilities in musical theater. Includes exercise in stage movement, staging and memorization of scenes, performance and musical theater, and reevaluation and practice.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUS 149 Opera Workshop**

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction to the techniques of opera. Includes exercise in stage movement, musical preparation, staging and memorization of scenes, performance of opera, and reevaluation and practice.

*Information:* May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUS 151 Exploring Music**

3 credit hours, 3 periods (3 lec.)

Introduction to various historical musical styles. Includes elements of music, musical instruments, the Middle Ages, the Renaissance, the Baroque era, classics, and the Nineteenth and Twentieth centuries.

**MUS 152 Introduction to Music Notation Software**

1 credit hour, 3 periods (3 lab)

Introduction to producing music using music notation software. Includes use of hardware and software, music notation software, and documentation of projects.

**MUS 153 Introduction to Electronic Music: Sequencing and Video**

2 credit hours, 6 periods (6 lab)

Introduction to producing music with WAV and MP3 sounds through computer software. Includes introduction to electronic music, concepts in acoustics and music synthesis, use of hardware and software, music sequencing software, documentation of projects, song data entry from computer synthesizer keyboards, editor/library, percussion writing, and timing to video.

*Information:* MUS 153A and 153B together constitute MUS 153.

**MUS 153A Introduction to Electronic Music: Sequencing**

1 credit hour, 3 periods (3 lab)

Introduction to producing music with WAV and MP3 sounds through computer software. Includes introduction to electronic music, concepts in acoustics and music synthesis, use of hardware and software, music sequencing software, and documentation of projects.

*Information:* MUS 153A and 153B together constitute MUS 153.

**MUS 153B Introduction to Electronic Music: Video**

1 credit hour, 3 periods (3 lab)

Introduction to producing music with WAV and MP3 sounds through computer software. Includes song data entry from computer synthesizer keyboards, editor/library, percussion writing, and timing to video.

*Prerequisite(s):* MUS 153A.

*Information:* Prerequisite(s) may be waived with consent of instructor. MUS 153A and 153B together constitute MUS 153.

**MUS 157 Music Industry I: Marketing, Merchandising and the Law**

3 credit hours, 3 periods (3 lec.)

Operation, scope, and career opportunities in the music business. Includes music in the marketplace, professional songwriting and music composition, music copyright and publishing, business affairs in the music industry, and application of information.

**MUS 158 Music Industry II: Music in Recording and Mass Media**

3 credit hours, 3 periods (3 lec.)

Operation, scope, and career opportunities in the music business. Includes focus on the record industry, environmental music, uses of music in radio, telecommunications and film, and career options.

**MUS 160 Popular Music in America**

3 credit hours, 3 periods (3 lec.)

Study of the history of popular music culture in America through current trends in today's society. Includes background of music, sources of music, birth of music, syncopated song and dance, jazz, crooners and jazz singers, musical theater, country music, Latin music traditions, and roots of rock and roll. Also includes impact of technology, motown and soul, rock in the seventies, and modern trends.

**MUS 201 History and Literature of Music I**

3 credit hours, 3 periods (3 lec.)

Music history and literature from the ancient Greeks through the Baroque. Includes emphasis on specific works and composers as representative of the evolution of Western music.

*Prerequisite(s):* MUS 125 or concurrent enrollment.

**MUS 202 History and Literature of Music II**

3 credit hours, 3 periods (3 lec.)

Music history and literature from Bach to the present. Includes emphasis on specific works and composers as representative of the evolution of Western music.

*Prerequisite(s):* MUS 125 or concurrent enrollment.

**MUS 223 Structure of Music III**

3 credit hours, 3 periods (3 lec.)

Continuation of MUS 126. Includes the nature of polyphony, writing simple melodic lines, basic contrapuntal technique, first species, fugue, theme and variations, binary form, rounded binary form, rondo, sonata forms, and concerto form.

*Prerequisite(s):* MUS 126.

*Corequisite(s):* MUS 224



**MUS 224 Aural Perception III**

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 129. Includes scales, intervallic recognition, melodic dictation of melodies, chord type identification, rhythmic dictation and performing notated rhythms, syncopated rhythms, and sight singing melodies. Also includes motives and motivic development, themes and thematic development, and conducting while performing various rhythms and melodies.

*Prerequisite(s):* MUS 129.

*Corequisite(s):* MUS 223

**MUS 226 Structure of Music IV**

3 credit hours, 3 periods (3 lec.)

Continuation of MUS 223. Includes extended chromaticism; aspects of form; influence of musical nationalism; compositional techniques and technical vocabulary; and late romantic and early 20th century tonal music.

*Corequisite(s):* MUS 228

**MUS 228 Aural Perception IV**

2 credit hours, 2 periods (2 lec.)

Continuation of MUS 224. Includes scales and modes, intervallic recognition, melodic dictation, chord type identification, chord progressions, modulation types rhythmic dictation, and syncopated rhythms, cross-rhythms, hemiola, and asymmetrical meter. Also includes sight singing melodies, motives and motivic development, themes and thematic development, and conducting while performing various rhythms and melodies.

*Corequisite(s):* MUS 226

**MUS 257 Music Recording and Production**

3 credit hours, 3 periods (3 lec.)

Introduction to the recording and production of music. Includes the elements of sound, the mixing board, hard drive recorder, microphone types and applications, recording strategies and room use, lab software for editing, mixing and re-recording, and creating a final project.

## Music Studio Instruction

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MUP 061 Studio Instruction: Brass (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 062 Studio Instruction: Guitar (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 063 Studio Instruction: Percussion (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 064 Studio Instruction: Piano (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 065 Studio Instruction: Strings (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 066 Studio Instruction: Voice (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 067 Studio Instruction: Woodwinds (Pre Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Information:* Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**MUP 161 Studio Instruction: Brass I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 162 Studio Instruction: Guitar I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 163 Studio Instruction: Percussion I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 164 Studio Instruction: Piano I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 165 Studio Instruction: Strings I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 166 Studio Instruction: Voice I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 167 Studio Instruction: Woodwinds I (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 168 Studio Instruction I: (Major)**

2 credit hours, 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

*Corequisite(s):* MUS 125, MUS 127

*Information:* Students chosen by audition.

**MUP 171 Studio Instruction: Brass II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 161. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 161.

*Corequisite(s):* MUS 126, MUS 129

**MUP 172 Studio Instruction: Guitar II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 162. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 162.

*Corequisite(s):* MUS 126, MUS 129

**MUP 173 Studio Instruction: Percussion II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 163. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 163.

*Corequisite(s):* MUS 126, MUS 129

**MUP 174 Studio Instruction: Piano II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 164. Private weekly instrumental lessons. Includes further development of performance skills and participation in recitals and jury exams.

*Prerequisite(s):* MUP 164.

*Corequisite(s):* MUS 126, MUS 129

**MUP 175 Studio Instruction: Strings II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 165. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 165.

*Corequisite(s):* MUS 126, MUS 129

**MUP 176 Studio Instruction: Voice II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 166. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 166.

*Corequisite(s):* MUS 126, MUS 129

**MUP 177 Studio Instruction: Woodwinds II (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 167. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 167.*

*Corequisite(s): MUS 126, MUS 129*

**MUP 178 Studio Instruction II: (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 168. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 168.*

*Corequisite(s): MUS 126, MUS 129*

**MUP 261 Studio Instruction: Brass III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 171. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 171.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 262 Studio Instruction: Guitar III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 172. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 172.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 263 Studio Instruction: Percussion III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 173. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 173.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 264 Studio Instruction: Piano III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 174. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 174.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 265 Studio Instruction: Strings III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 175. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 175.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 266 Studio Instruction: Voice III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 176. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 176.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 267 Studio Instruction: Woodwinds III (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 177. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 177.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 268 Studio Instruction III: (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 178. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 178.*

*Corequisite(s): MUS 223, MUS 224*

**MUP 271 Studio Instruction: Brass IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 261. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 261.*

*Corequisite(s): MUS 226, MUS 228*

**MUP 272 Studio Instruction: Guitar IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 262. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 262.*

*Corequisite(s): MUS 226, MUS 228*

**MUP 273 Studio Instruction: Percussion IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 263. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 263.*

*Corequisite(s): MUS 226, MUS 228*

**MUP 274 Studio Instruction: Piano IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 264. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 264.*

*Corequisite(s): MUS 226, MUS 228*

**MUP 275 Studio Instruction: Strings IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 265. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 265.*

*Corequisite(s): MUS 226, MUS 228*

**MUP 276 Studio Instruction: Voice IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 266. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s): MUP 266.*

*Corequisite(s): MUS 226, MUS 228*

**MUP 277 Studio Instruction: Woodwinds IV (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 267. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 267.

*Corequisite(s):* MUS 226, MUS 228

**MUP 278 Studio Instruction IV: (Major)**

2 credit hours, 4 periods (4 lab)

Continuation of MUP 268. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

*Prerequisite(s):* MUP 268.

*Corequisite(s):* MUS 226, MUS 228

## Nursing

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**NRS 104 Nursing Process I**

4 credit hours, 4 periods (4 lec.)

Nursing 104 introduces the student to the application of the nursing process and to the concepts of client, health, environment and nurse with emphasis on caring for the adult and older adult client. This course introduces the student to behaviors that serve as the basis of effective nursing practice: (1) a safe practitioner, (2) an effective communicator, (3) a manager/teacher, (4) a culturally competent/caring healthcare provider, and (5) professional and ethical issues of being a nurse. The student applies nursing theory in the college laboratory and the clinical setting while caring for adults and older adults in acute care, long term care and community environments.

*Prerequisite(s):* WRT 101 or concurrent enrollment.

*Corequisite(s):* NRS 104LC, NRS 104LS, NRS 108, NRS 155

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 104LC Nursing Process I Clinical Lab**

3 credit hours, 9 periods (9 lab)

This is the Clinical Lab portion of NRS 104.

*Prerequisite(s):* WRT 101 or concurrent enrollment.

*Corequisite(s):* NRS 104, NRS 104LS, NRS 108, NRS 155

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 104LS Nursing Process I Skills Lab**

1 credit hour, 3 periods (3 lab)

This is the Skills Lab portion of NRS 104.

*Prerequisite(s):* WRT 101 or concurrent enrollment.

*Corequisite(s):* NRS 104, NRS 104LC, NRS 108, NRS 155

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 105 Nursing Process II**

4 credit hours, 4 periods (4 lec.)

Continuation of NRS 104. Application of the nursing process and expansion on the concepts of client, health, environment and nurse, with emphasis on caring for adult clients with common health alterations. Expansion of behaviors that are the basis of effective nursing practice: (1) safe practitioner, (2) effective communicator, (3) manager/teacher, (4) a culturally competent/caring healthcare provider, and (5) professional and ethical issues of being a nurse. Includes additional application of theory in the college laboratory and the clinical setting in acute care environments.

*Prerequisite(s):* NRS 104, 104LC, 104LS, 108, 155, and WRT 101 and BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

*Corequisite(s):* NRS 105LC, NRS 105LS

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.



**NRS 105LC Nursing Process II Clinical Lab**

4 credit hours, 12 periods (12 lab)

This is the clinical lab portion of NRS 105.

*Prerequisite(s):* NRS 104, 104LC, 104LS, 108, 155, and WRT 101 and BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

*Corequisite(s):* NRS 105, NRS 105LS

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 105LS Nursing Process II Skills Lab**

1 credit hour, 3 periods (3 lab)

This is the Skills Lab portion of NRS 105.

*Prerequisite(s):* NRS 104, 104LC, 104LS, 108, 155, and WRT 101 and BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

*Corequisite(s):* NRS 105, NRS 105LC

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 108 Drug Calculations**

1 credit hour, 1 periods (1 lec.)

Computation of medication dosage. Includes basic mathematics review, calculation of medications, interpretation of labels, alternate methods of administration, methods of medication calculations, and calculations related to route of administration and in specialty areas.

*Prerequisite(s):* WRT 101 or concurrent enrollment.

*Corequisite(s):* NRS 104, NRS 104LC, NRS 104LS, NRS 155

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 155 Introduction to Pharmacology**

3 credit hours, 3 periods (3 lec.)

Application of the nursing process to actions, uses, and effects of medications. Designed for nursing students and includes classifications, actions, uses, contraindications, doses, routes of administration, side effects, interactions, and incompatibilities. Also includes the application of the nursing process to the safe administration of medications and appropriate client/family education.

*Prerequisite(s):* WRT 101 or concurrent enrollment.

*Corequisite(s):* NRS 104, NRS 104LC, NRS 104LS, NRS 108, WRT 101

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 188 Transition to Associate Degree Nursing**

4 credit hours, 4 periods (4 lec.)

Non-clinical course facilitating transition of the Licensed Practical Nurse (LPN) into the Pima Community College Associate Degree Nursing program. Includes role transition through the application of the nursing process and orients the student to the philosophy, major concepts and program outcomes of the ADN program, and focuses on adult clients experiencing selected health alterations.

*Prerequisite(s):* BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

*Corequisite(s):* NRS 188LS

*Information:* In order to enroll in this course, the student must hold a current valid Licensed Practical Nurse (LPN) license in Arizona. The student must also meet all admission criteria for the Associate Degree Nursing Program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 188LS Transition to Associate Degree Nursing Skills Lab**

1 credit hour, 3 periods (3 lab)

This is the Skills Lab portion of NRS 188.

*Prerequisite(s):* BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

*Corequisite(s):* NRS 188

*Information:* In order to enroll in this course, the student must hold a current valid Licensed Practical Nurse (LPN) license in Arizona. The student must also meet all admission criteria for the Associate Degree Nursing Program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 196 Independent Study in Nursing**

1-9 credit hours, 1-9 periods (1-9 lec.)

Content to be determined by conference between student and instructor.

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 201 Nursing Process III**

5 credit hours, 5 periods (5 lec.)

Continuation of NRS 105 or NRS 188. Application of the nursing process and expansion of the concepts of nurse, health, client, and environment, with an emphasis on the family and child and clients with mental health disorders. Includes content related to the roles of safe practitioner, effective communicator, manager/teacher and culturally competent/caring healthcare provider. Also includes professional and ethical issues related to provision of nursing care. Also includes additional clinical application of selected nursing skills and knowledge of the developing family and child and clients with mental health disorders.

*Prerequisite(s):* BIO 205IN, ECE 107 or PSY 240, NRS 105, 105LC, and 105LS; and BIO 127IN or FSN 127IN and WRT 102 or concurrent enrollment.

*Corequisite(s):* NRS 201LC, NRS 203

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 201LC Nursing Process III Clinical Lab**

4 credit hours, 12 periods (12 lab)

This is the clinical lab portion of NRS 201.

*Prerequisite(s):* BIO 205IN, ECE 107 or PSY 240, NRS 105, 105LC, and 105LS; and BIO 127IN or FSN 127IN and WRT 102 or concurrent enrollment.

*Corequisite(s):* NRS 201, NRS 203

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

**NRS 202 Nursing Process IV**

3 credit hours, 3 periods (3 lec.)

Continuation of NRS 201. Application and synthesis of the nursing process with expansion of the concepts of client, health, environment and nurse. Includes further development of performance behaviors that will serve as the basis of effective nursing practice: (1) safe practitioner, (2) effective communicator, (3) manager/teacher, (4) culturally competent/caring health care provider, (5) professional and ethical practitioner. Also includes the application of nursing theory in the clinical setting while caring for adults with complex health alterations.

*Prerequisite(s):* BIO 127IN or FSN 127IN, NRS 201, NRS 201LC, NRS 203 and WRT 102.

*Corequisite(s):* NRS 202CA, NRS 202CB

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

**NRS 202CA Nursing Process IV Clinical Lab - A**

3.5 credit hours, 10.5 periods (10.5 lab)

This is the Clinical Lab Part A portion of NRS 202.

*Prerequisite(s):* BIO 127IN or FSN 127IN, NRS 201, 201LC, NRS 203, and WRT 102.

*Corequisite(s):* NRS 202, NRS 202CB

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

**NRS 202CB Nursing Process IV Clinical Lab - B**

2.5 credit hours, 7.5 periods (7.5 lab)

This is the Clinical Lab Part B portion of NRS 202.

*Prerequisite(s):* BIO 127IN or FSN 127IN, NRS 201, 201LC, NRS 203, and WRT 102.

*Corequisite(s):* NRS 202, NRS 202CA

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

**NRS 203 Trends and Issues in Nursing**

1 credit hour, 1 periods (1 lec.)

Exploration of the role of the nurse as a safe practitioner with legal and ethical responsibilities. Includes current issues and trends in nursing and health care delivery and the role of the nurse as a member of the profession.

*Prerequisite(s):* BIO 205IN, ECE 107 or PSY 240, NRS 105, 105LC, and 105LS; and BIO 127IN or FSN 127IN and WRT 102 or concurrent enrollment.

*Corequisite(s):* NRS 201, NRS 201LC

*Information:* Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

## Nursing Assistant

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**NRA 101 Nursing Assistant**

2 credit hours, 2 periods (2 lec.)

Introduction to nursing assisting. Includes body systems and common diseases, basic nursing assisting skills, providing client care, providing restorative care, providing long-term care, home health care, and certification requirements.

*Prerequisite(s):* Within the last two years: REA 091 with a C or better or an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 101LC, NRA 101LS

*Information:* Students must obtain consent from the Nursing Department before enrolling in this course.

**NRA 101LC Nursing Assistant Clinical**

1 credit hour, 3 periods (3 lab)

Clinical Lab for NRA 101.

*Prerequisite(s):* Within the last two years: REA 091 with a C or better or an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 101, NRA 101LS

**NRA 101LS Nursing Assistant Skills**

1 credit hour, 3 periods (3 lab)

Skills Lab for NRA 101.

*Prerequisite(s):* Within the last two years: REA 091 with a C or better or an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 101, NRA 101LC

**NRA 102 Patient Care Technician**

1 credit hour, 1 periods (1 lec.)

Introduction to the role of the patient care technician. Includes legal and ethical considerations, infection control, principles of asepsis during dressing changes and catheterizations, recording an electrocardiogram, proper procedure of a venipuncture, enteral feedings, and communication and interpersonal skills.

*Prerequisite(s):* Within the last two years: REA 091 with a C or better or an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 102LC, NRA 102LS

*Information:* Students must obtain consent from the Nursing Department before enrolling in this course. You must be a Certified Nursing Assistant or have successfully completed NRA 101 within the last two years to enroll in this course.

**NRA 102LC Patient Care Tech Clinical**

.67 credit hours, 2 periods (2 lab)

Clinical Lab for NRA 102.

*Prerequisite(s):* Within the last two years: REA 091 with a C or better or an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 102, NRA 102LS

*Information:* Students must obtain consent from the Nursing Department before enrolling in this course. You must be a Certified Nursing Assistant or have successfully completed NRA 101/101LC/101LS within the last two years to enroll in this course.

**NRA 102LS Patient Care Tech Skills**

.33 credit hours, 1 periods (1 lab)

Skills lab for NRA 102.

*Prerequisite(s):* Within the last two years: REA 091 with a C or better or an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 102, NRA 102LC

*Information:* Students must obtain consent from the Nursing Department before enrolling in this course. You must be a Certified Nursing Assistant or have successfully completed NRA 101/101LC/101LS within the last two years to enroll in this course.

## Office and Administrative Professions

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**OAP 111 Computer Keyboarding for Office Technology**

1 credit hour, 2 periods (2 lab)

Development of keyboarding skills to include mastery of alphabet, numeric, and symbol keyboards. Includes drills to build speed and accuracy skills with document processing of business correspondence. Also includes letters, reports, tables, resumes, language arts, and word processing commands.

*Information:* Course may be repeated two times for a total of 3 credits.

**OAP 123 Professional Development for Administrative Support**

3 credit hours, 6 periods (6 lab)

Procedures and skills for securing a job. Includes resume development, interview techniques, application forms, application letter, research requirements, customer service skills, job shadowing, and sexual harassment.

*Recommendation:* Completion of OAP 111 or equivalent proficiency on computer keyboard before enrolling in this course.

**OAP 132 Records Management: Filing Systems**

3 credit hours, 3 periods (3 lec.)

Principles and procedures of filing systems. Includes rules for indexing, coding, and filing, cross references, filing systems, advantages and disadvantages of each filing system, file maintenance and management, and simulations.

**OAP 171 Office Procedures**

3 credit hours, 4 periods (2 lec., 2 lab)

Functions and procedures used in a wide range of office activities. Includes visitors and clients, office functions, document production, communication skills, office duties and tasks, travel arrangements, meetings, conferences, professional attitudes and image, and job evaluation.

*Prerequisite(s):* OAP 111.

**OAP 199 Co-op: Office and Administrative Professions**

1 credit hour, 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Social and psychological reasons for working, methods of securing employment, preparation of career and job-related objectives and evaluation of student work experience.

*Corequisite(s):* OAP 199WK

*Information:* May be taken two times for a maximum of two credit hours.

**OAP 199WK Co-op Work: Office and Administrative Professions**

1-8 credit hours, 5-40 periods (5-40 lab)

A supervised cooperative work program for students in a related occupation area. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

*Corequisite(s):* OAP 199

*Information:* May be taken two times for a maximum of sixteen credit hours.

## Optical Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### OPS 201 Geometrical and Instrumental Optics I

3 credit hours, 3 periods (3 lec.)

Basic principles of light, refraction, reflection, properties of optical glass, prisms, paraxial optics, pupils and stops, visual and other basic instruments, aberrations, measurements, and testing.

*Prerequisite(s):* ENG 110IN, MAT 220, 231, and PHY 210IN.

*Corequisite(s):* OPS 201LB

### OPS 201LB Geometrical and Instrumental Optics I Laboratory

1 credit hour, 4 periods (4 lab)

Cleaning optics, measuring refractive indices, reflection, deviating prisms, scanners, ideal imaging, thin lenses, thick lenses, Gaussian reduction, and throughput.

*Prerequisite(s):* ENG 110IN, MAT 220, 231, and PHY 210IN.

*Corequisite(s):* OPS 201

### OPS 202 Geometrical and Instrumental Optics II

3 credit hours, 3 periods (3 lec.)

Optical instruments, field and relay lenses, telescopes, microscopes, optical materials, achromatization, illumination, cameras, and projectors.

*Prerequisite(s):* OPS 201/201LB.

*Corequisite(s):* OPS 202LB

### OPS 202LB Geometrical and Instrumental Optics II Laboratory

1 credit hour, 4 periods (4 lab)

Measuring refractive indices, dispersing and deviating prisms, thin lenses, thick lenses, aberration evaluation, Keplerian and Galileo telescopes, and compound microscopes.

*Prerequisite(s):* OPS 201/201LB.

*Corequisite(s):* OPS 202

## Paralegal

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### PAR 101 Introduction to Paralegal Careers

3 credit hours, 3 periods (3 lec.)

Role, responsibilities and ethical standards of the paralegal. Includes paralegal employment and regulation, ethical rules of the legal profession, law office administration and systems, communication, introduction to legal research and legal analysis, state and federal judicial systems, and overview of litigation and specialty areas of law.

### PAR 102 Civil Litigation Procedures I

3 credit hours, 3 periods (3 lec.)

Principles and procedures for commencement of civil litigation. Includes rules of civil procedure, subject matter jurisdiction, venue, statutes of limitations, parties, pleading format, preparation of complaint and answer, counterclaims, crossclaims, and third party practice. Also includes the causes of action, remedies, and potential defenses in contract and tort law.

*Prerequisite(s):* PAR 101 and WRT 101 or concurrent enrollment.

### PAR 103 Legal Research

3 credit hours, 3 periods (3 lec.)

Principles and techniques of legal research. Includes categories of research materials, citing legal material, finding and using secondary authority, finding tools. Shepards Citators, case law, constitutions, statutes and administrative law, analyzing research problems, and preparing research reports.

*Prerequisite(s):* PAR 101 and WRT 102.

*Information:* Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 104 Paralegal Ethics**

3 credit hours, 3 periods (3 lec.)

Rules and principles of professional responsibility in the legal field. Includes sources of the rules of legal ethics, ethical guidelines and attorney supervision of paralegals, unauthorized practice of law, confidentiality, conflicts of interest, advertising and solicitation, attorney's fees and fiduciary duties, competence, malpractice, ethical conduct issues in litigation, and professional integrity issues.

*Prerequisite(s):* PAR 103 or concurrent enrollment.

*Information:* Prerequisite may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 106 Civil and Criminal Evidence**

3 credit hours, 3 periods (3 lec.)

Paralegal's role in the analysis and application of the rules of evidence. Includes relevancy and its limits, privileges, use, impeachment, and exclusion of witness, opinion and expert testimony, hearsay, authentication, and contents of writings, recordings, and photographs.

*Prerequisite(s):* PAR 103 or concurrent enrollment.

*Information:* Prerequisite may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 202 Civil Litigation Procedures II**

3 credit hours, 3 periods (3 lec.)

Continuation of PAR 102. Includes discovery/disclosure procedures in Federal Court and in Arizona Superior Court, file organization and document control, pre-trial motions, gathering and organizing evidence, preparation of witnesses, alternative dispute resolutions, trial, post-trial and appellate procedures.

*Prerequisite(s):* PAR 102.

**PAR 203 Tort Law Procedures**

3 credit hours, 3 periods (3 lec.)

Concepts and procedures used in tort law cases. Includes tort litigation procedures and tort case law in the areas of negligence, professional negligence, strict liability, product liability, liability issues, and insurance coverage. Also includes interviewing and investigation techniques for the paralegal in tort cases.

*Prerequisite(s):* PAR 101 and 102.

*Information:* Prerequisites may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

**PAR 204 Wills, Trusts, and Estates**

3 credit hours, 3 periods (3 lec.)

Concepts and procedures of wills, trusts and estate planning for paralegals. Includes Arizona statutes and rules, probate and non-probate property, testate or intestate succession, will drafting and execution, will-related documents and advance directives, trusts, estate administration and related legal actions.

*Prerequisite(s):* PAR 101.

*Information:* Prerequisite(s) may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

**PAR 206 Criminal Law and Procedures I**

3 credit hours, 3 periods (3 lec.)

Criminal law and trial processes from arrest through pre-trial procedures. Includes rules of criminal procedure, initial criminal law process, pretrial investigation and discovery, criminal and constitutional law cases, criminal statutes, and pretrial motion practice.

*Prerequisite(s):* PAR 101.

*Information:* Prerequisite may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

**PAR 207 Criminal Law and Procedures II**

3 credit hours, 3 periods (3 lec.)

Continuation of PAR 206. Includes rules of criminal procedure, trial rights of defendants, trial procedure, case preparation for trial, direct and cross examination, evidentiary objections, and motions for the close of evidence.

*Prerequisite(s):* PAR 106 or concurrent enrollment, and PAR 206.



**PAR 208 Domestic Relations and Family Law**

3 credit hours, 3 periods (3 lec.)

Law and procedures related to family relationships and domestic matters. Includes basic principles of family law, marital contracts, legal issues in family law affecting children, initiating a divorce proceeding, contested proceedings, and assisting at a dissolution trial.

*Prerequisite(s):* PAR 101.

*Information:* Prerequisite may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

**PAR 209 Bankruptcy Procedures**

3 credit hours, 3 periods (3 lec.)

Application of legal procedures in bankruptcy. Includes jurisdiction, cast of characters and their roles in bankruptcy, client interview, evaluation of options, advising client, and drafting Chapter 7 liquidation, Chapter 13 adjustment of debts of individuals, Chapter 12 adjustment of debts of family farmer, Chapter 11 reorganization, and the paralegal's role.

*Prerequisite(s):* PAR 101.

*Information:* Prerequisite may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

**PAR 211 Legal Writing**

3 credit hours, 3 periods (3 lec.)

Principles and techniques of legal writing. Includes writing style, editing and proofreading, legal analysis, legal brief types, and applications of legal writing for memoranda, litigation documents, and correspondence.

*Prerequisite(s):* PAR 103, 202 and WRT 102.

**PAR 212 Law Office Computerization**

3 credit hours, 3 periods (3 lec.)

Application of computer software in a legal field. Includes computer hardware and software, word processing applications, database management systems, spreadsheet software, law office management, automated litigation support, telecommunications, and specialized legal software for the preparation of legal documents and document organization.

*Prerequisite(s):* CIS/CSA 104 and PAR 101.

*Information:* Prerequisites may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

**PAR 213 Computer-Assisted Legal Research**

3 credit hours, 3 periods (3 lec.)

Computer assisted research systems. Includes historical development, full-text system; Westlaw, search techniques, and display elements, databases, special services, and Internet searching.

*Prerequisite(s):* PAR 103.

*Information:* Prerequisite may be waived with equivalent research experience; see a PAR advisor or course instructor.

**PAR 215 Corporate Law Procedures**

3 credit hours, 3 periods (3 lec.)

Procedures and document drafting for the formation of business entities. Includes introduction to agency law, non-corporate entities, business corporations, corporation changes, forms of corporations, financing a public or private corporation, changes in corporate structure, and the role of the paralegal in corporate law.

*Prerequisite(s):* PAR 101.

*Information:* Prerequisite(s) may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 217 Real Estate Legal Procedures**

3 credit hours, 3 periods (3 lec.)

Legal procedures and requirements in real estate transactions and litigation. Includes real estate principles and legal concepts, recording and constructive notice, and real property taxes. Also includes an analysis of real estate contracts and purchase agreements, escrows and closings, deeds, co-ownership, legal descriptions, leases, encumbrances, liens, and foreclosures.

*Prerequisite(s):* PAR 101.

*Information:* Employment in a legal-related field or an Arizona Real Estate license may be substituted for PAR 101. See a PAR Advisor or course instructor for prerequisite information.

**PAR 218 Administrative Law: Employment**

1 credit hour, 1 periods (1 lec.)

Concepts and procedures of employment law for paralegals. Includes an overview of employment law and regulations, and practical applications in employment law.

*Prerequisite(s):* PAR 101 and 103.

*Information:* Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 219 Administrative Law: Immigration**

1 credit hour, 1 periods (1 lec.)

Concepts and procedures of immigration law for paralegals. Includes an overview of immigration law and regulations, and practical applications in immigration law.

*Prerequisite(s):* PAR 101 and 103.

*Information:* Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 220 Administrative Law: Social Security**

1 credit hour, 1 periods (1 lec.)

Concepts and procedures of social security law for paralegals. Includes an overview of social security law and regulations, and practical applications in social security law.

*Prerequisite(s):* PAR 101 and 103.

*Information:* Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

**PAR 290 Paralegal Internship**

4 credit hours, 16 periods (1 lec., 15 lab)

Volunteer paralegal field experience at an approved work site. Includes communications, positive work attitudes, ethics, progress review, law office systems, professional development, employment strategies, and final evaluation within a classroom seminar setting.

*Prerequisite(s):* PAR 104, 202 and WRT 102.

*Information:* Enrollment and placement contingent upon earned grade point average in PAR courses. Designed for students in their final semester of course work in the Paralegal Program. Six credit hours of PAR specialty electives from the following list must be taken - PAR 203, 204, 206, 207, 208, 209, 212, 215, 217, 218, 219, or 220. A minimum of 45 credit hours if completing the AAS Degree, or 27 credit hours in completing the certificate are required. Application and acceptance required.

## Pharmacy Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**PHT 170 Introduction to Pharmacy Technology**

2 credit hours, 2 periods (2 lec.)

An overview of the history, structure, operation, and function of the pharmacy, and the roles of the pharmacist and pharmacy support personnel. Includes: medical terminology, emphasizing common medical roots, prefixes, and suffixes; pharmaceutical abbreviations; and dosage forms and routes of administration. Also includes: information and reference resources; an introduction to third-party payment systems, HMO's, Medicare, and Medicaid; and contemporary issues, including legal and ethical aspects and future concepts in pharmacy.

*Prerequisite(s):* With a C or better: REA 091 or assessment into REA 112 and WRT 090 or assessment into WRT 101.

**PHT 171IN Pharmaceutical Calculations**

4 credit hours, 6 periods (3 lec., 3 lab)

Mathematical computations needed in the practice of pharmacy technology. Includes fundamentals of mathematical calculations, units and measures for the calculation of drug dosages, and interpretation of the prescription or medication order. Also includes calculation of drug dosages, reducing and enlarging formulas, percentage preparations, dilution and concentration, isotonic solutions and electrolyte solutions.

*Prerequisite(s):* PHT 170 or concurrent enrollment and MAT 092.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**PHT 172 Drug Therapy I**

4 credit hours, 4 periods (4 lec.)

Overview of the relationship between the central nervous system (CNS), the autonomic nervous system (ANS) and pharmaceutical therapy. Includes anatomy and physiology of the CNS, neurotransmission and disorders of the CNS, therapeutic applications of drugs affecting the CNS, and characteristics of drugs of the CNS. Also includes anatomy and physiology of the ANS, drug action on ANS neurotransmission, disorders treated with autonomic drugs, and types and characteristics of autonomic drugs.

*Prerequisite(s):* With a C or better: REA 091 or assessment into REA 112 and WRT 090 or assessment into WRT 101, and PHT 170 or concurrent enrollment.

**PHT 174IN Pharmacy Operations**

3 credit hours, 5 periods (2 lec., 3 lab)

An integrated course combining lecture and laboratory exercise in practical, technical, and legal aspects of drug management; distribution (dispensing); and storage in outpatient (retail), inpatient (hospital), and nursing home settings. Includes pharmacy equipment and devices, materials, non-sterile dosage forms, and inventory control. Also includes small or large scale compounding, packaging and quality control; practical aspects of recordkeeping, and insurance issues relevant to the daily pharmacy operations.

*Prerequisite(s):* PHT 170, PHT 171IN or concurrent enrollment.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**PHT 175IN Pharmacy Operations**

5 credit hours, 11 periods (2 lec., 9 lab)

An integrated course combining lecture and laboratory exercise in practical, technical, and legal aspects of drug management; distribution (dispensing); and storage in outpatient (retail), inpatient (hospital), and nursing home settings. Includes pharmacy equipment and devices, concepts related to computer operations, materials, non-sterile dosage forms, and inventory control. Also includes small or large scale compounding, packaging and quality control; practical aspects of recordkeeping, and insurance issues relevant to the daily pharmacy.

*Prerequisite(s):* PHT 170, PHT 171IN or concurrent enrollment.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**PHT 178IN Computer Applications for Pharmacy**

3 credit hours, 5 periods (2 lec., 3 lab)

Basic concepts of computer operation. Includes the Internet, computer hardware and software, and professional pharmacy applications in retail and hospital pharmacy.

*Prerequisite(s):* PHT 170 or concurrent enrollment.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**PHT 179IN Sterile Products**

5 credit hours, 9 periods (3 lec., 6 lab)

Application of aseptic techniques and use of the laminar flow hood in the preparation of sterile products. Includes history of sterile products and parenteral therapy, characteristics of sterile products, principles of fluid and electrolyte therapy, basics of microbiology, antiseptics and sterilization, and sterile products calculations. Also includes introduction to IV labels and profile systems, aseptic techniques, total parenteral nutrition, incompatibilities, quality control and related pharmacy software; and specialized sterile products.

*Prerequisite(s):* PHT 170 and PHT 171IN

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**PHT 180IN Sterile Products**

4 credit hours, 6 periods (3 lec., 3 lab)

Application of aseptic techniques and use of the laminar flow hood in the preparation of sterile products. Includes history of sterile products and parenteral therapy, characteristics of sterile products, principles of fluid and electrolyte therapy, basics of microbiology, antiseptics and sterilization, and sterile products calculations. Also includes introduction to IV labels and profile systems, aseptic techniques, total parenteral nutrition, incompatibilities, quality control, and specialized sterile products.

*Prerequisite(s):* PHT 170 and PHT 171.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

**PHT 181 Interprofessional Relations in Pharmacy**

3 credit hours, 3 periods (3 lec.)

Overview of effective communications skills needed by the pharmacy technician to use interpersonally and between the pharmacist, the patient, and other health care professionals. Includes human relations development, personality inventory, and elements in communication in areas of non-verbal, interpersonal, barriers, listening, empathy and interviewing. Also includes building better patient understanding in special situations such as death and dying, ethnicity, conflict resolution, and ethical patient care.

*Prerequisite(s): PHT 170 or concurrent enrollment.*

**PHT 182 Drug Therapy II**

4 credit hours, 4 periods (4 lec.)

Relationship between anatomy and physiology, disease states, and pharmaceutical therapy. Includes origins, dosage forms, indications, actions, routes of administration and side effects of both prescription and non-prescription drugs used in diseases of the cardiovascular, circulatory, renal, endocrine, respiratory, digestive, reproductive, and integumentary systems.

*Prerequisite(s): PHT 172.*

**PHT 187 Pharmacy Law and Ethics**

3 credit hours, 3 periods (3 lec.)

Practical guide to pharmacy law and ethics for the pharmacy technician. Includes state and federal law, roles of the pharmacist and the pharmacy technician, and ethical practices for patients.

*Prerequisite(s): PHT 170 or concurrent enrollment.*

**PHT 190LB Pharmacy Technician Internship**

4 credit hours, 16 periods (16 lab)

On-site training in outpatient and inpatient pharmacy services under direct supervision of designated pharmacist.

*Prerequisite(s): PHT 170, 171IN, 172, 175IN, 179IN, 181, 182, and 187. PHT 174IN, 178IN, and 180IN can replace 175IN and 179IN.*

*Information: Consent of program coordinator is required before enrolling in this course.*

**PHT 197 Clinical Seminar**

2 credit hours, 2 periods (2 lec.)

Topics and discussions of importance to the pharmacy technician. Includes employment search preparation, research reports, and technical papers. Also includes a review of the Arizona Pharmacy Association Pharmacy Technician Certification Exam.

*Prerequisite(s): PHT 170, 171IN, 172, 175IN, 179IN, 181, 182, and 187. PHT 174IN, 178IN, 180IN can replace PHT 175IN and 179IN.*

*Information: Consent of program coordinator is required before enrolling in this course.*

## Philosophy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**PHI 101 Introduction to Philosophy**

3 credit hours, 3 periods (3 lec.)

Survey of Western Philosophy. Includes primary source readings in western philosophic areas: logic, epistemology, ethics, social/political philosophy, philosophy of religion, metaphysics, philosophy of science, and aesthetics.

**PHI 120 Introduction to Logic**

3 credit hours, 3 periods (3 lec.)

Introduction to the main types of logical reasoning. Includes the nature of language, deductive logic, and inductive logic.

**PHI 122 God, Mind, and Matter**

3 credit hours, 3 periods (3 lec.)

Introduction to the metaphysics and epistemology of the cognitive and material domains of Western philosophy. Includes philosophic method, distinctions, God, mind, and matter in ancient philosophy, medieval philosophy, modern philosophy, and contemporary philosophy and physics.

**PHI 123 Philosophical Foundations of Science**

3 credit hours, 3 periods (3 lec.)

Introduction to Western philosophical foundations of science. Includes philosophical and scientific methods, classical, medieval, modern and contemporary science and mathematics, and philosophical problems raised by discovery and change.

**PHI 130 Introductory Studies in Ethics and Social Philosophy**

3 credit hours, 3 periods (3 lec.)

Introduction to the study of the principles of morality and standards of conduct from a western philosophical perspective. Includes philosophical method, foundations of moral philosophy, ethical-value judgments and human nature, theories of social morality and justice, and emotions and faith.

**PHI 140 Philosophy of Religion**

3 credit hours, 3 periods (3 lec.)

Introduction to Western philosophical methods as applied to religion. Includes philosophical method, nature and meaning of religion and God, classical arguments, faith and reason, theodicy, mysticism, and the impact of religion on ethics, psychology, and law.

*Information: Same as REL 140.*

## Phlebotomy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**PHB 160 Foundations of Phlebotomy**

3 credit hours, 3 periods (3 lec.)

Overview of the role of phlebotomy in the healthcare profession. Includes the role of the phlebotomist within the culture of healthcare, conventions of laboratory organization and structure, the organization and purposes of laboratory departments, and the services a laboratory provides as an essential key to diagnosis. Also includes medical vocabulary, laboratory terminology, and basic anatomy and physiology with a focus on the circulatory system.

**PHB 162 Safety Standards in Phlebotomy**

3 credit hours, 3 periods (3 lec.)

Study of phlebotomy safety practices and infection control in a laboratory setting. Includes quality controls, procedural controls, processing requirements, and transportation procedures. Also includes patient education, related legal guidelines, OSHA standards, and proper equipment operation.

*Corequisite(s): PHB 164, PHB 166LB*

**PHB 164 Professional Practices in Phlebotomy**

3 credit hours, 3 periods (3 lec.)

A survey of professional practices in phlebotomy, including values, ethical behavior in the workplace, and workers' rights and responsibilities. Includes stress management, development of positive personal communication skills, and concepts of teamwork. Also includes OSHA and other regulatory requirements.

*Corequisite(s): PHB 162, PHB 166LB*

**PHB 166LB Phlebotomy Laboratory Practice**

2 credit hours, 6 periods (6 lab)

Laboratory practice performing phlebotomy and capillary collections, including proper order of draw, labeling, and specimen handling. Includes study of basic storage, transportation, and processing. Also includes proper laboratory conduct and safety.

*Corequisite(s): PHB 162, PHB 164*

**PHB 190LC Clinical Internship in Phlebotomy**

1-3 credit hours, 5-15 periods (5-15 lab)

Capstone experience for phlebotomy students. Includes an externship in the field where students practice the skills and knowledge they gain during training, such as single and multi-draw venipuncture, capillary draws, storage and transportation of specimens, testing and processing specimens, legal and ethical behaviors and documentation, and professional conduct.

*Prerequisite(s): PHB 160, 162, 164 and 166LB.*

*Information: Credit hours will vary depending on length of time needed for student to obtain required experience for certification.*

## Physics

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### PHY 121IN Introductory Physics I

5 credit hours, 7 periods (4 lec., 3 lab)

Introduction to general physics for programs requiring a one-year, non-calculus based physics course. Includes the nature of physics; linear motion and kinematics; dynamics; work and energy; and linear momentum. Also includes rotational motion; heat; states of matter; and waves and sound.

*Prerequisite(s):* Placement into College Algebra (MAT 151) or higher.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

### PHY 122IN Introductory Physics II

5 credit hours, 7 periods (4 lec., 3 lab)

Continuation of PHY 121IN. Includes light, electricity, magnetism and electromagnetism, relativity, atomic physics, quantum physics, wave mechanics, and nuclear physics.

*Prerequisite(s):* PHY 121IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

### PHY 195 Introduction to Research in Physics

4 credit hours, 4 periods (4 lec.)

Introduction to the methods of research in physics. Includes scientific laboratory procedures, experimental design, scientific writing, scientific ethics, and current research in working laboratories.

*Information:* Consent of instructor is required before enrolling in this course.

### PHY 196 Independent Studies in Physics

1-4 credit hours, 3-12 periods (3-12 lab)

Independent studies and projects in physics and allied science fields. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of eight credit hours.

### PHY 210IN Introductory Mechanics

5 credit hours, 7 periods (4 lec., 3 lab)

Calculus-based introduction to mechanics for physics, engineering, and mathematics majors. Includes nature of physics; linear motion and kinematics; dynamics; work and energy; linear momentum; and rotational motion.

*Prerequisite(s):* With a grade of C or higher: MAT 220.

*Information:* High school physics is strongly recommended before enrolling in this course. IN is the integrated version of the course with the lecture and lab taught simultaneously.

### PHY 216IN Introductory Electricity and Magnetism

5 credit hours, 7 periods (4 lec., 3 lab)

Calculus-based introduction to electricity and magnetism for physics, mathematics, and engineering majors. Includes electric charge and Coulomb's law, the electric field, Gauss's law, electric potential, capacitors and dielectrics, current and resistance, the magnetic field, Ampere's law and Biot-Savart law, and Faraday's law of induction. Also includes magnetic properties of matter, inductance, alternating current, Maxwell's equations, and electromagnetic waves.

*Prerequisite(s):* With a grade of C or higher: MAT 231 and PHY 210IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

### PHY 221IN Introduction to Waves and Heat

4 credit hours, 6 periods (3 lec., 3 lab)

Calculus-based introduction to waves and heat for physics, mathematics and engineering majors. Includes fluid statics and dynamics, temperature, heat and thermodynamics, kinetic theory, thermodynamics and entropy, oscillations and simple harmonic motion, and wave motion. Also includes electromagnetic waves and the propagation of light, diffraction and interference, reflection and refraction at plane surfaces, and spherical mirrors and lenses.

*Prerequisite(s):* With a grade of C or higher: MAT 231 and PHY 210IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.



**PHY 295LB Independent Research in Physics**

1-4 credit hours, 3-12 periods (3-12 lab)

Experience in scientific laboratory research. Specific content to be determined by student and instructor.

*Information:* One semester of physics and consent of instructor is required before enrolling in this course. May be taken three times for a maximum of twelve credit hours.

## Political Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**POS 100 Introduction to Politics**

3 credit hours, 3 periods (3 lec.)

Issues, principles, and trends in political science. Includes politics and political science, political philosophy and ideology, comparative politics, American national government, and international relations.

**POS 196 Independent Study in Political Science**

2-4 credit hours, 2-4 periods (2-4 lec.)

Independent readings or special projects in political science. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of eight credit hours.

**POS 201 American National Government and Politics**

3 credit hours, 3 periods (3 lec.)

Basic concepts and substance of American politics. Includes methods of political analysis, cultural environment of American politics, impact of class, gender, and immigration, Constitution, civil liberties, and civil rights, and public opinion and fundamental values. Also includes political institutions, institutions of government, economic and social policy-making, and American foreign policy and interdependence.

*Information:* The combination of both POS 201 and 231 satisfies the requirement for teacher certification, as does POS 210.

**POS 202 Introduction to International Relations**

3 credit hours, 3 periods (3 lec.)

Examination of contemporary international relations. Includes approaches to the study of international relations, international systems, actors in the international systems, foreign policies, and major forms of interactions.

**POS 203 Introduction to Political Ideas**

3 credit hours, 3 periods (3 lec.)

Introductory survey of western political philosophy. Includes political philosophy as a discipline, and introduction to the ideas of key political thinkers from ancient through medieval, early modern, late modern, and contemporary periods.

**POS 204 Introduction to Comparative Politics**

3 credit hours, 3 periods (3 lec.)

Basic concepts and substance of comparing political systems. Includes methods of comparative political analysis, politics the socio-cultural environment, public authority, and political power, individuals, cultural diversity, and state, political institutions, governmental institutions, and political change.

**POS 210 National and State Constitutions**

3 credit hours, 3 periods (3 lec.)

Principles and procedures of national and state constitutions. Includes major principles of American and Arizona Constitutionalism, historical and legal environments of the United States and Arizona constitutions, structures, powers, and responsibilities of United States government, structures of Arizona government, civil liberties and civil rights in the United States, and constitutional change.

*Information:* POS 210 satisfies the requirement for teacher certification as does the combination of both POS 201 and 231.

**POS 231 American State and Local Governments and Politics**

3 credit hours, 3 periods (3 lec.)

Basic concepts and substance of American state and local politics and government. Includes methods of political analysis, federalism/intergovernmental relations, cultural environment of state and local politics, impact of class, gender, age and occupation, public opinion and fundamental values. Also includes interest articulation and aggregation, institutions and processes of state and local governments, tribal governments, and state and local policy-making.

*Information:* The combination of both POS 201 and 231 satisfies the requirements for teacher certification, as does POS 210.

**POS 240 Understanding Terrorism**

3 credit hours, 3 periods (3 lec.)

Analysis of terrorism as an international phenomenon. Includes terrorism definitions and perspectives, classifications of terrorism, cultural and geographical issues, responses by governments to terrorism, terrorism's future impact on the international and domestic scene, and current government reports on terrorism.

**POS 290 Political Science Internship**

3 credit hours, 9 periods (9 lab)

Supervised internship in a governmental or other political office. Includes placement with elected officials or candidates for public office, city, county, state, or federal governmental agencies, and advocacy groups. Also includes substantive assignments involving development and application of analytical, research and writing skills.

*Prerequisite(s):* WRT 101.

*Information:* Completion of 6 credit hours of Political Science courses are required before enrolling in this course. May take course a maximum of three times for a total of nine credit hours. If the course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

## Professional Flight Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**PFT 101 Stage One: Ground School**

4 credit hours, 4 periods (4 lec.)

Knowledge and procedures for the Federal Aviation Administration (FAA) private pilot ground school certificate. Includes aerodynamics, instruments and systems, weight and balance, cross-country planning, Airman's Informational Manual (AIM), Notices to Airmen (NOTAMS), aircraft/facility directory, radio navigation, weather, safe and efficient operation of airplanes, and final examination.

## Psychology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**PSY 100 Psychology I**

6 credit hours, 6 periods (6 lec.)

*Information:* PSY 100A and 100B together constitute PSY 100.

**PSY 100A Psychology I**

3 credit hours, 3 periods (3 lec.)

Survey of psychology including history, perspectives, and methods; development; intelligence, thinking, and language; personality; psychopathology; psychotherapy; and social cognition and behavior.

*Recommendation:* REA 091 with a C or better (or assessment into REA 112).

*Information:* The content of PSY 100A and 100B together constitute the content of PSY 100.

**PSY 100B Psychology II**

3 credit hours, 3 periods (3 lec.)

Survey of psychology including history, perspectives, and methods; structure and functions of the nervous and endocrine systems; perception; learning; motivation and emotion; personality; and stress and health.

*Recommendation:* REA 091 with a C or better (or assessment into REA 112).

*Information:* The content of PSY 100A and 100B together constitute the content of PSY 100.

**PSY 101 Introduction to Psychology**

4 credit hours, 4 periods (4 lec.)

Survey of psychology including history, perspectives, and methods; structure and functions of the nervous and endocrine systems; development; perception; learning; memory; intelligence, thinking and language; motivation and emotion; personality; psychopathology; psychotherapy; stress and health; and social cognition and behavior.

*Prerequisite(s):* With a grade of C (or better) in REA 091 or higher; or assessment into REA 112.

*Information:* Content is a combination of elements of PSY 100A and 100B.

**PSY 101HC Introduction to Psychology: Honors**

4 credit hours, 4 periods (4 lec.)

Survey of psychology including history, perspectives, and methods; structure and functions of the nervous and endocrine systems; development; perception; learning; memory; intelligence, thinking and language; motivation and emotion; personality; psychopathology; psychotherapy; stress and health; and social cognition and behavior. Also may include the following Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "publishable quality", peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.

*Prerequisite(s):* With a grade of C (or better) in REA 091 or higher; or assessment into REA 112.

*Information:* Must qualify for Honors program. PSY 101HC will fulfill any PSY 101 requirement. Faculty or Advisor approval may be required before enrolling in this course.

**PSY 132 Psychology and Culture**

3 credit hours, 3 periods (3 lec.)

Current knowledge about human diversity in behavior and culture using examples from a variety of contexts within western and global societies. Includes cross-cultural psychology, such as intergroup relations, diverse cognitive styles, ethnocentrism, gender, personality, emotion, language, communication, work and health. Also includes enculturation throughout the lifespan and increasing awareness of how behavioral and cognitive principles affect interactions in a multicultural world.

*Recommendation:* Completion of PSY 100A or 101 before enrolling in this class.

**PSY 214 Abnormal Psychology**

3 credit hours, 3 periods (3 lec.)

Overview of the theoretical models, diagnosis, disorders, and treatment approaches in the field of abnormal psychology. Includes history; models; anxiety and mood disorders; mind and body disorders; psychosis and cognitive functioning disorders; and life span disorders.

*Prerequisite(s):* PSY 100A or 101.

*Information:* Prerequisite(s) may be waived with consent of instructor before enrolling in this class.

**PSY 215 Human Sexuality**

3 credit hours, 3 periods (3 lec.)

Examination of human sexual experience throughout the life cycle, viewed from sociological and psychological perspectives. Includes psychological, sociological, and cultural legacy of sexuality, biological foundations of sexuality, varieties of sexual behaviors, sexuality and the life cycle, sexual problems, and social issues.

*Recommendation:* Completion of one of the following before enrolling in this course: PSY 100A, PSY 100B, PSY 101, or SOC 101. REA 091 with a C or better (or assessment into REA 112).

*Information:* Same as SOC 215.

**PSY 216 Psychology of Gender**

3 credit hours, 3 periods (3 lec.)

Biological and social explanations of gender development and behaviors. Includes research methods used to study gender, biological sexual differentiation, differential socialization and gender stereotyping, gender differences, limitations of traditional gender roles, cross-cultural gender issues, and changing gender roles.

*Recommendation:* Completion of PSY 100A and 100B, or PSY 101 before enrolling in this course. REA 091 with a C or better (or assessment into REA 112).

**PSY 218 Health Psychology**

3 credit hours, 3 periods (3 lec.)

Overview of health psychology in relationship to cultural diversity in the United States, and awareness of the universal aspect of humanity. Includes mind-body relationships, behavior risk factors, and psychosocial aspects of specific disorders. Also includes health psychology, social, economic, and political dimensions of relationships between and among ethnic and gender groups.

*Recommendation:* Completion of PSY 100A or 100B or PSY 101 before enrolling in this course. REA 091 with a C or better (or assessment into REA 112).

**PSY 220 The Psychology of Death and Loss**

3 credit hours, 3 periods (3 lec.)

Adjustment to death and loss. Includes thinking about death, meaning of death, death system, dying, hospice, and end-of-life issues. Also includes suicide, violent death, euthanasia, bereavement, funeral process, near death experiences, and death education and counseling.

*Recommendation:* Completion of PSY 100A or 100B or 101 before enrolling in this course. REA 091 with a C or better (or assessment into REA 112).

**PSY 224 Investigating Paranormal Psychology**

3 credit hours, 3 periods (3 lec.)

Survey of experiments and case studies in paranormal phenomena. Includes extrasensory perception, psychokinesis, and reports of near-death experiences. Also includes research methodologies and potential applications.

*Recommendation:* Completion of PSY 100A or 101 before enrolling in this class. REA 091 with a C or better (or assessment into REA 112).

**PSY 230 Psychological Measurements and Statistics**

3 credit hours, 3 periods (3 lec.)

Measurement, quantitative description and statistical inference as applied to psychological variables. Includes scientific research and statistics, descriptive statistics, inferential statistics, correlation and linear regression, and non-parametric tests.

*Prerequisite(s):* PSY 100A or 101, and MAT 095 or 097 or 122 or 122Z or 123 with a C or better.

*Information:* Prerequisite(s) may be waived with consent of instructor before enrolling in the class.

**PSY 240 Developmental Psychology**

3 credit hours, 3 periods (3 lec.)

Human development from conception through adulthood. Includes physical, cognitive, emotional, and social development milestones at various periods in the lifespan. Also includes research methods used in developmental psychology, and the exploration of empirical literature in psychology as it relates to developmental issues.

*Prerequisite(s):* PSY 100A and 100B, or 101.

*Information:* Prerequisite(s) may be waived with consent of instructor before enrolling in the class.

**PSY 254 Psychology of Love and Compassion**

3 credit hours, 3 periods (3 lec.)

Introduction to theory and research on the psychology of love and caring. Includes applications to mental, physical and spiritual health. Also includes gender behaviors and expectations in loving relationships.

*Recommendation:* Completion of PSY 100A or 100B or PSY 101. REA 091 with a C or better (or assessment into REA 112).

**PSY 262 Positive Psychology**

3 credit hours, 3 periods (3 lec.)

An introduction to research, theory and intellectual history of positive psychology. Overview and application of psychological principles relevant to the nature of happiness and psychological well-being as opposed to dysfunction and symptoms of mental disorders. Includes research methods, authenticity, happiness, mindfulness, positive interventions, emotional intelligence, character strengths, creativity, and core values and virtues.

*Recommendation:* PSY 101 with a C or better. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**PSY 289 Psychology Research Methods**

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to scientific methodologies used in psychological research. Includes experience in using a range of psychological research methods for students.

*Prerequisite(s):* PSY 100A and 100B, or PSY 101; and PSY 230 and WRT 101 with a grade of C or better.

*Recommendation:* Designed for students planning to major or minor in psychology.

*Information:* Prerequisite(s) may be waived with consent of instructor before enrolling in this class.

## Radiologic Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**RAD 170 Medical Imaging Fundamentals**

2 credit hours, 2 periods (2 lec.)

Principles of radiographic imaging. Includes program orientation, production of diagnostic radiation, image formation, ethics and professionalism, patient care and assessment, age specific care considerations, and radiographic positioning of the abdomen and chest.

*Corequisite(s):* RAD 170LB

*Information:* Consent of program director is required before enrolling in this course.

**RAD 170LB Medical Imaging Fundamentals Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of RAD 170. Principles of radiographic imaging. Includes program orientation, production of diagnostic radiation, image formation, ethics and professionalism, patient care and assessment, age specific care considerations, and radiographic positioning of the abdomen and chest.

*Corequisite(s):* RAD 170

*Information:* Consent of program director is required before enrolling in this course.

**RAD 171 Radiographic Positioning I**

3 credit hours, 3 periods (3 lec.)

Overview of radiographic procedures. Includes standard terms, general considerations, positioning considerations for routine and special radiographic procedures, and radiographic positions of the upper extremities, shoulder girdle, and lower extremities.

*Prerequisite(s):* RAD 170 and 170LB.

*Corequisite(s):* RAD 171LB, RAD 172, RAD 172LB, RAD 173LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 171LB Radiographic Positioning I Lab**

1.5 credit hours, 4.5 periods (4.5 lab)

This is the lab portion of RAD 171. Review of radiographic procedures. Includes standard terms, general considerations, positioning considerations for routine and special radiographic procedures, and radiographic positions of the upper extremities, shoulder girdle, and lower extremities.

*Prerequisite(s):* RAD 170 and 170LB.

*Corequisite(s):* RAD 171, RAD 172, RAD 172LB, RAD 173LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 172 Medical Imaging Technology I**

3 credit hours, 3 periods (3 lec.)

Introduction to the principles of x-ray production. Includes matter and the atom, mass and energy; electricity, magnetism, and electromagnetism; x-ray tubes, x-ray generators, diagnostic x-ray systems, ALARA guidelines and practices, and the prime factors.

*Prerequisite(s):* RAD 170 and 170LB.

*Corequisite(s):* RAD 171, RAD 171LB, RAD 172LB, RAD 173LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 172LB Medical Imaging Technology I Lab**

.5 credit hours, 1.5 periods (1.5 lab)

This is the lab portion of RAD 172. Introduction to the principles of x-ray production. Includes matter and the atom, mass and energy; electricity, magnetism, and electromagnetism; x-ray tubes, x-ray generators, diagnostic x-ray systems, ALARA guidelines and practices, and the prime factors.

*Prerequisite(s):* RAD 170 and 170LB.

*Corequisite(s):* RAD 171, RAD 171LB, RAD 172, RAD 173LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 173LC Clinical Education I**

6 credit hours, 24 periods (24 lab)

Introduction to the first clinical practicum. Includes clinical site orientation, radiographic equipment and supplies, exam protocols, and routine and special radiographic examinations.

*Prerequisite(s):* RAD 170 and 170LB.

*Corequisite(s):* RAD 171, RAD 171LB, RAD 172, RAD 172LB

*Information:* Clinical Education Centers may require additional fees and a tuberculosis skin test. Students must be admitted to RAD program before enrolling in this course. Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

**RAD 174 Radiographic Positioning II**

3 credit hours, 3 periods (3 lec.)

Continuation of RAD 171. Includes routine and special positioning of the pelvis, hips, SI joints, boney thorax, and vertebral column. Also includes pediatric radiography, trauma/surgical mobile radiography, and related osseous system pathology.

*Prerequisite(s):* Rad 171, 171LB, 172, 172LB, and 173LC.

*Corequisite(s):* RAD 174LB, RAD 175, RAD 175LB, RAD 176LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 174LB Radiographic Positioning II Lab**

1.5 credit hours, 4.5 periods (4.5 lab)

This is the lab portion of RAD 174. Continuation of RAD 171. Includes routine and special positioning of the pelvis, hips, SI joints, boney thorax, and vertebral column. Also includes pediatric radiography, trauma/surgical mobile radiography, and related osseous system pathology.

*Prerequisite(s):* RAD 171, 171LB, 172, 172LB, and 173LC.

*Corequisite(s):* RAD 174, RAD 175, RAD 175LB, RAD 176LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 175 Medical Imaging Technology II**

3 credit hours, 3 periods (3 lec.)

Continuation of RAD 172/172LB. Includes concepts of radiographic image quality, x-ray interactions with matter, formulation of x-ray techniques, automatic exposure control, and x-ray detection devices.

*Prerequisite(s):* RAD 171, 171LB, 172, 172LB, and 173LC.

*Corequisite(s):* RAD 174, RAD 174LB, RAD 175LB, RAD 176LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 175LB Medical Imaging Technology II Lab**

.5 credit hours, 1.5 periods (1.5 lab)

This is the lab portion of RAD 175. Continuation of RAD 172/172LB. Includes concepts of radiographic image quality, x-ray interactions with matter, formulation of x-ray techniques, automatic exposure control, and x-ray detection devices.

*Prerequisite(s):* RAD 171, 171LB, 172, 172LB, and 173LC.

*Corequisite(s):* RAD 174, RAD 174LB, RAD 175, RAD 176LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 176LC Clinical Education II**

6 credit hours, 24 periods (24 lab)

Continuation of RAD 173LC. Includes routine and special radiographic procedures, trauma and mobile radiography, osseous pathology, and pediatric radiography.

*Prerequisite(s):* RAD 171, 171LB, 172, 172LB, and 173LC.

*Corequisite(s):* RAD 174, RAD 174LB, RAD 175, RAD 175LB

*Information:* Clinical Education Centers may require additional fees and a tuberculosis skin test. Student must be admitted to the RAD program before enrolling in this course. Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

**RAD 177LC Clinical Education III**

6 credit hours, 24 periods (24 lab)

Continuation of RAD 176LC. Includes routine and special radiographic procedures, mobile radiography, emergency department procedures, and observation and assisting in fluroscopic procedures.

*Prerequisite(s):* RAD 174, 174LB, 175, 175LB, and 176LC.

*Information:* Clinical Education Centers may require additional fees and a tuberculosis skin test. Student must be admitted to the RAD program before enrolling in this course. Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.



**RAD 180 Introduction to Radiation Biology**

1 credit hour, 1 periods (1 lec.)

An introduction to radiobiological concepts and principles. Includes history of radiobiology, fundamental radiation units, biologic and physical factors of cell and tissue radiosensitivity, and radiation induced malignancies.

*Prerequisite(s):* RAD 177LC.

*Corequisite(s):* RAD 181, RAD 182, RAD 183LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 181 Radiographic Positioning III**

3 credit hours, 3 periods (3 lec.)

Continuation of RAD 174. Includes radiographic positioning and fluoroscopic procedures of the urinary system, pharmacodynamics of radiopaque contrast media, intravenous drug administration technique (venipuncture), the digestive system, the biliary system, and pathology.

*Prerequisite(s):* RAD 174, 174LB, and 177LC.

*Corequisite(s):* RAD 180, RAD 181LB, RAD 182, RAD 183LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 182 Medical Imaging Technology III**

3 credit hours, 3 periods (3 lec.)

Continuation of RAD 175. Includes image intensification, digital fluoroscopy, special imaging procedures, quality control, other imaging modalities, and professional roles and behaviors.

*Prerequisite(s):* RAD 175, 175LB, and 177LC.

*Corequisite(s):* RAD 180, RAD 181, RAD 181LB, RAD 183LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 183LC Clinical Education IV**

4 credit hours, 16 periods (16 lab)

Continuation of RAD 177LC. Includes diagnostic and fluoroscopic equipment and procedures, contrast media policies and protocols, intravenous administration, and routine and special examinations.

*Prerequisite(s):* RAD 177LC.

*Corequisite(s):* RAD 180, RAD 181, RAD 181LB, RAD 182

*Information:* Clinical Education Centers may require additional fees and a tuberculosis skin test. Student must be admitted to RAD program before enrolling in this course. Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

**RAD 184 Radiographic Positioning IV**

3 credit hours, 3 periods (3 lec.)

Continuation of RAD 181. Includes positioning and anatomy of the skull and facial bones, acute medical emergencies, infection control and preventing transmissible diseases, review of vital signs, and the second part of radiation biology.

*Prerequisite(s):* RAD 180, 181, 182, and 183LC.

*Corequisite(s):* RAD 184LB, RAD 185, RAD 186LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 184LB Radiographic Positioning IV Lab**

.5 credit hours, 1.5 periods (1.5 lab)

This is the lab portion of RAD 184. Continuation of RAD 181. Includes positioning and anatomy of the skull and facial bones, acute medical emergencies, infection control and preventing transmissible diseases, review of vital signs, and the second part of radiation biology.

*Prerequisite(s):* RAD 180, 181, 182, and 183LC.

*Corequisite(s):* RAD 184, RAD 185, RAD 186LC

*Information:* Consent of program director is required before enrolling in this course.

**RAD 185 Clinical Seminar**

2.5 credit hours, 2.5 periods (2.5 lec.)

This is a capstone course. Includes review of radiographic procedures and exams, image acquisition and evaluation, patient care, equipment operation/maintenance/quality control, radiation protection and safety, and completion of registry mock exams.

*Prerequisite(s):* RAD 180, 181, 182, and 183LC.

*Corequisite(s):* RAD 184, RAD 184LB, RAD 186LC

*Information:* Consent of program director is required before enrolling in this course. This is a capstone course which includes review of program curriculum and instruction in applying to the American Registry of Radiologic Technology (AART) and the Medical Radiologic Technology Board of Examiners (MRTBE). The course includes review sessions, written mock registry and multiple computerized exams.

**RAD 186LC Clinical Education V**

6 credit hours, 24 periods (24 lab)

Continuation of RAD 183LC. Includes skull and facial bones radiographic procedures, advanced modality rotations, and image critique and evaluation.

*Prerequisite(s):* RAD 180, 181, 182, and 183LC.

*Corequisite(s):* RAD 184, RAD 184LB, RAD 185

*Information:* Clinical Education Centers may require additional fees and a tuberculosis skin test. Student must be admitted to the RAD program before enrolling in this course. Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporated critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures

## Reading

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**REA 071 Reading Fundamentals**

4 credit hours, 4 periods (4 lec.)

Development of fundamental reading strategies. Includes extensive development of word analysis, vocabulary, information literacy, and reading strategies necessary to assure successful comprehension at the literal and interpretive levels.

*Information:* Designed for persons who need an intensive review of the basic reading strategies.

**REA 081 Reading Improvement I**

4 credit hours, 4 periods (4 lec.)

Improvement of basic reading strategies. Includes development of word analysis, vocabulary, information literacy, and reading strategies necessary to assure successful comprehension at the literal level and interpretive levels.

*Prerequisite(s):* REA 071 with a C or better or required score on Reading assessment test.

*Information:* Designed for persons who need to improve strategies in order to increase their success in college. May be taken two times for a maximum of eight credit hours.

**REA 091 Reading Improvement II**

4 credit hours, 4 periods (4 lec.)

Development of reading strategies. Includes vocabulary comprehension, study strategies, metacognition, information literacy, and community of readers.

*Prerequisite(s):* ESL 088RV with a C or better, REA 081 or required score on the Reading assessment.

*Information:* May be taken two times for a maximum of 8 credits hours.

**REA 112 Critical Reading**

4 credit hours, 4 periods (4 lec.)

Development of college reading strategies. Includes comprehension strategies at the college level, critical reading and thinking, information literacy, vocabulary development, and advanced study strategies.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. Reading: ESL 088RV with a B or better, or REA 091 with a C or better, or required score on the Reading assessment. Writing: ESL 088WG with a B or better, or WRT 070 with a C or better, or required score on the Writing assessment.

*Information:* Student may be admitted with instructor recommendation.

**REA 112HP Critical Reading for Health Professions**

4 credit hours, 4 periods (4 lec.)

Development of college reading strategies. Includes comprehension strategies at the college level, critical reading and thinking, information literacy, vocabulary development, and advanced study strategies.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. Reading: ESL 088RV with a B or better, or REA 091 with a C or better, or required score on the Reading assessment. Writing: ESL 088WG with a B or better, or WRT 070 with a C or better, or required score on the Writing assessment.

*Recommendation:* Recommended for students pursuing an associate's degree in Nursing, Radiologic Technology, Respiratory Therapy or Dental Hygiene Education.

*Information:* Students must obtain consent of an advisor, counselor, or reading instructor before enrolling in this course. Same as REA 112.

## Religion

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**REL 119 Judaism, Christianity, and Islam**

3 credit hours, 3 periods (3 lec.)

Introduction to the three major western religions. Includes nature of religious belief, development of Judaism, teachings of Judaism, festivals and rituals of Judaism, development of Christianity, teachings of Christianity, Christian festivals and rituals, development of Islam, teachings of Islam, Islamic festivals and rituals, and common heritage, emphasis, and variations of Judaism, Christianity, and Islam.

**REL 130 Asian Religions**

3 credit hours, 3 periods (3 lec.)

Religions of India and the Far East. Includes Hinduism, Buddhism, and East Asian religions.

**REL 140 Philosophy of Religion**

3 credit hours, 3 periods (3 lec.)

Introduction to Western philosophical methods as applied to religion. Includes philosophical method, nature and meaning of religion and God, classical arguments, faith and reason, theodicy, mysticism, and the impact of religion on ethics, psychology, and law.

*Information:* Same as PHI 140.

**REL 200 Religion in Popular Culture**

3 credit hours, 3 periods (3 lec.)

Exploration of the relationship between religion and contemporary society. Includes representation of religion in popular culture, function of religion as popular culture, and conflicts between religion and popular culture. Also includes a focus on popular media, such as movies, television, music, news, advertising, and recreation.

**REL 220 Old Testament**

3 credit hours, 3 periods (3 lec.)

Major books of the Old Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

**REL 221 New Testament**

3 credit hours, 3 periods (3 lec.)

Major books of the New Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

## ROTC - Air Force

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MLA 100 Foundations of Air Force I**

2 credit hours, 2 periods (2 lec.)

Foundations of the United States Air Force I is the first half of a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force.

*Information:* United States Air Force Reserve Officers' Training Corps (AFROTC). Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

**MLA 101 Foundation of the Air Force II**

2 credit hours, 2 periods (2 lec.)

Foundations of the United States Air Force II is the second half of a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force.

*Information:* United States Air Force Reserve Officers' Training Corps (AFROTC). Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

**MLA 110 Military Aerospace Physical Training Program**

1 credit hour, 2 periods (2 lab)

Introduction to the Air Force physical training program. Includes attention to the group's physical ability, emphasis on individual physical abilities, and gradual increase to a higher level of physical fitness. Also includes establishment of goals and standards for conduct in physical training, and prepares the student to pass the Air Force Physical Fitness Assessment (AF PFA).

*Information:* Initial dates for the AF PFA will be determined the first week of class and identified in the cadet wing calendar.

**MLA 200 Evolution of USAF Air and Space Power I**

2 credit hours, 2 periods (2 lec.)

Evolution of USAF Air and Space Power I is the first half of a survey course that features topics on Air Force heritage and leaders. Includes introduction to air power through examination of the Air Force Core Functions; and application of communication skills. Course purpose is to instill an appreciation of the development and employment of air power and to motivate second year students to transition from Air Force Reserve Officers' Training Corps (AFROTC) Cadet to Air Force ROTC Officer Candidate.

*Information:* United States Air Force Reserve Officers' Training Corps (AFROTC) Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

**MLA 201 Evolution USAF Air and Space Power II**

2 credit hours, 2 periods (2 lec.)

Evolution of USAF Air and Space Power II is the second half of a survey course that features topics on Air Force heritage and leaders. Includes introduction to air power through examination of the Air Force Core Functions; and application of communication skills. Course purpose is to instill an appreciation of the development and employment of air power and to motivate second year students to transition from Air Force Reserve Officers' Training Corps (AFROTC) Cadet to Air Force ROTC Officer Candidate.

*Information:* United States Air Force Reserve Officers' Training Corps (AFROTC) Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

**ROTC - Army**

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**MLS 100 Introduction to Military Skills I**

3 credit hours, 3 periods (3 lec.)

Introduction to Army leadership and the Reserve Officers' Training Corps (ROTC) program. Includes role of the U.S. Army, principles and techniques of applied leadership, customs, traditions and military courtesy, basic marksmanship, first aid, land navigation, and small-unit tactics.

*Information:* Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

**MLS 101 Introduction to Military Skills II**

3 credit hours, 3 periods (3 lec.)

Continuation of MLS 100. Introduction to Army leadership and the Reserve Officers' Training Corps (ROTC) program. Includes U.S. Army tactical concepts such as map reading, land navigation, and general operations. Also includes Adaptive Leader Methodology (ALM) and development of leader character presence, intellect, and intelligence.

*Prerequisite(s):* MLS 100 with a C or better.

*Information:* Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

*Prerequisite(s):* May be waived with consent of instructor.

**MLS 102 Army Physical Training**

1 credit hour, 1.5 periods (.5 lec., 1 lab)

Introduction to the importance of physical fitness and its life long benefits. Includes physical conditioning, establishing goals and setting standards for physical training.

**MLS 200 Army Leadership Dynamics I**

3 credit hours, 3 periods (3 lec.)

Foundations of tactical leadership strategies and styles. Includes development of attributes and core leadership competencies of Army rank, structure, and duty. Also includes personal motivation and team building through planning, executing, assessing team exercises, and leadership sessions.

*Prerequisite(s):* MLS 100 and 101 with a C or better.

*Information:* Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

*Prerequisite(s):* May be waived with consent of instructor.

**MLS 201 Army Leadership Dynamics II**

3 credit hours, 3 periods (3 lec.)

Continuation of MLS 200. Foundations of tactical leadership strategies and styles. Includes challenges of leading tactical teams in the operational environment; dynamics of adaptive leadership in military operations; and development of individual leadership styles. Also includes self-awareness, communications, and team building skills.

*Prerequisite(s):* MLS 200 with a C or better.

*Information:* Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

*Prerequisite(s):* May be waived with consent of instructor.

**MLS 296 Independent Study in Military Science**

3 credit hours, 3 periods (2 lec., 1 lab)

Advanced level study in leadership, values and ethics, personal development, officership, tactics and techniques, and effective writing. Includes topics that contribute to the development of professional and proficient cadets and officers.

*Information:* Course offered in cooperation with the University of Arizona. *Information:* See an instructor before enrolling in this course.

## ROTC - Navy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**NSP 100 Naval Laboratory I**

1 credit hour, 2 periods (2 lab)

Overview of the Naval service. Includes drill and ceremonies, physical fitness, cruise preparation, sail training, safety awareness, and personal finances. Also includes applied exercises in naval ship systems, navigation, naval operations, naval administration, and military justice.

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona. May be taken four times for a maximum of four credit hours.

**NSP 101 Introduction to Naval Science**

3 credit hours, 3 periods (3 lec.)

Provides the general military information required of a junior officer in the naval service by introducing structure, mission, and long held customs and traditions. Includes a brief description of each community within the Navy, an outline of Military Law as it applies to the junior officer, sea power and its implications, and shipboard damage control and safety.

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

**NSP 102 Naval Ship Systems I**

3 credit hours, 3 periods (3 lec.)

Overview of naval ship systems engineering. Includes the fundamentals of ship construction, stability, damage control and repair, basic thermodynamics, and steam and nuclear propulsion systems.

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program at the University of Arizona is required before enrolling in this course. This course is offered in cooperation with the University of Arizona.

**NSP 103 Naval Laboratory I (Marine Option)**

2 credit hours, 4 periods (4 lab)

Overview of drill and physical readiness requirements for Marines. Includes topics, such as drill and ceremonies, physical fitness, Officer Candidate School (OCS) preparation, Land Navigation training, safety awareness, general military subjects, and applied field exercises in Marine Corps small unit.

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

**NSP 110 Navy/Marine Physical Training**

1 credit hour, 2 periods (2 lab)

Introduction to Navy and Marine Corps physical training. Includes physical fitness and physical leadership through running, swimming, calisthenics, circuit training, obstacle course, and team-effort events. Also includes establishment of goals and standards for conduct in physical training, and prepares the student to pass the Navy Personal Fitness Assessment (PFA) or the Marine Corps Physical Fitness Test (PFT) and Combat Fitness Test (CFT).

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona. A final physical fitness test will be run during the last month of the course.

**NSP 201 Naval Ship Systems II**

3 credit hours, 3 periods (3 lec.)

Introduction to the basic concepts in detection, tracking, and destruction of enemy forces. Emphasis will be placed on the fundamentals of weapon systems theory, principles, and application. Discussion of past, present, and future weapons will be included to understand the evolution of weapons systems components and their applications.

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

**NSP 202 Sea Power and Maritime Affairs**

3 credit hours, 3 periods (3 lec.)

United States (U.S.) Naval history from the American Revolution to the present. Includes the general concept of sea power, the role of various warfare components of the Navy in supporting its mission, the implementation of sea power as an instrument of national policy, and a comparative study of U.S. and Soviet naval strategies.

*Information:* Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

## Respiratory Therapy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**RTH 110 Introduction to Respiratory Care**

4 credit hours, 4 periods (4 lec.)

Overview of respiratory care. Includes respiratory care and the health care system, computer applications, terms, symbols, and units of measure, patient safety, communication, and record keeping, demonstration of basic life support, principles of infection control, ethical and legal implications of practice, cultural sensitivity in health care, and disaster preparedness.

*Corequisite(s):* RTH 112, RTH 121, RTH 121LB

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 112 Respiratory Physiology**

4 credit hours, 4 periods (4 lec.)

Study of the cardiopulmonary system and associated structures. Includes the anatomy of the respiratory system, ventilation and diffusion of pulmonary gases, the circulatory system, oxygen and carbon dioxide transport, control of ventilation, and renal failure and its effects on the cardiopulmonary system.

*Corequisite(s):* RTH 110, RTH 121, RTH 121LB

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 121 Basic Therapeutics**

4 credit hours, 4 periods (4 lec.)

Basic respiratory care therapeutics, equipment function, clinical indications and contraindications. Includes medical gas therapy, oxygen delivery devices, humidity and aerosol therapy, hyperinflation therapy, chest physical therapy, and basic airway management.

*Corequisite(s):* RTH 110, RTH 112, RTH 121LB

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.



**RTH 121LB Basic Therapeutics Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of RTH 121.

**Corequisite(s):** RTH 110, RTH 112, RTH 121

**Information:** Students must be admitted to the Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 123 Basic Assessment and Monitoring**

3 credit hours, 3 periods (3 lec.)

Study of patient assessment and monitoring of the cardiopulmonary impaired patient. Includes bedside respiratory assessment, clinical laboratory studies assessment, oxygenation and ventilation, pulmonary function measurements, clinical application of chest radiography, and basic interpretation of electrocardiogram tracing.

**Prerequisite(s):** RTH 110, 112, 121 and 121LB.

**Corequisite(s):** RTH 123LB, RTH 124, RTH 125LC, RTH 162, RTH 246

**Information:** Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 123LB Basic Assessment and Monitoring Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of RTH 123.

**Prerequisite(s):** RTH 110, 112, 121 and 121LB.

**Corequisite(s):** RTH 123, RTH 124, RTH 125LC, RTH 162, RTH 246

**Information:** Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 124 Pharmacology for Respiratory Care**

3 credit hours, 3 periods (3 lec.)

Principles of pharmacology and drug receptor theory as it relates to patients with cardiopulmonary disease. Includes general principles of pharmacology, drug dose calculations, central and peripheral nervous system, bronchodilators, drugs used to control airway mucus and edema, and drugs used in the management of ventilator patients and patients with cardiorespiratory disorders.

**Prerequisite(s):** RTH 110, 112, 121 and 121LB.

**Corequisite(s):** RTH 123, RTH 123LB, RTH 125LC, RTH 162, RTH 246

**Information:** Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 125LC Clinical Procedures I**

1 credit hour, 4 periods (4 lab)

Clinical application of all prerequisite and concurrent respiratory care course work. Includes hospital/clinical site orientations, review of hospital respiratory department administration, departmental policies, procedures, reporting system, and medical record data entry, utilization of the medical record to retrieve information, therapist observation, medical gas therapy, and patient assessment and monitoring. Also includes aerosol therapy administration, hyperinflation therapy, evaluation of the effectiveness of therapy, and patient care plans.

**Prerequisite(s):** RTH 110, 112, 121, and 121LB.

**Corequisite(s):** RTH 123, RTH 123LB, RTH 124, RTH 162, RTH 246

**Information:** Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 135LC Clinical Procedures II**

3 credit hours, 12 periods (12 lab)

Continuation of RTH 125LC. Includes infection control procedures, medical asepsis, equipment disinfection, and processing, aerosol and humidity therapy, medical gas therapy, IPPB therapy, incentive spirometry, and chest physiotherapy. Also includes airway management and care, basic cardiopulmonary resuscitation, arterial blood gases, and case study presentation.

**Prerequisite(s):** RTH 123, 123LB, 124, 125LC, 162, and 246.

**Corequisite(s):** RTH 123, RTH 123LB, RTH 124, RTH 162, RTH 246

**Information:** Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 162 Principles of Mechanical Ventilation**

3 credit hours, 3 periods (3 lec.)

Introduction to the concepts of mechanical ventilation for the adult patient. Includes establishing the need for mechanical ventilation, non-invasive versus invasive mechanical ventilation, the physiologic basis of ventilatory support, physical principles of positive pressure ventilation, physical assessment of the critically ill patient, interpreting basic waveform graphics, and respiratory monitoring in the intensive care unit.

*Prerequisite(s):* RTH 110, 112, 121, and 121LB.

*Corequisite(s):* RTH 123, RTH 123LB, RTH 124, RTH 125LC, RTH 135LC, RTH 246

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 241 Critical Care Therapeutics**

4 credit hours, 4 periods (4 lec.)

Study of critical care principles and procedures in the adult patient. Includes airway management, mechanical ventilation waveform graphics, selected adult mechanical ventilators and troubleshooting, care of the mechanically ventilated patient, alternative modes of mechanical ventilation, and home mechanical ventilation.

*Prerequisite(s):* RTH 135LC.

*Corequisite(s):* RTH 241LB, RTH 243, RTH 243LB, RTH 245LC

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 241LB Critical Care Therapeutics Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of RTH 241.

*Prerequisite(s):* RTH 135LC.

*Corequisite(s):* RTH 241, RTH 243, RTH 243LB, RTH 245LC

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 243 Advanced Assessment and Monitoring**

4 credit hours, 4 periods (4 lec.)

Study of the assessment of the critical respiratory patient. Includes cardiac output assessment, invasive hemodynamic monitoring, assessment of sleep-related breathing disorders, nutritional assessment and the respiratory system, advanced cardiac arrhythmia interpretation, cardiac stress testing, bronchoscopy, and advanced pulmonary function testing.

*Prerequisite(s):* RTH 135LC.

*Corequisite(s):* RTH 241, RTH 241LB, RTH 243LB, RTH 245LC

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 243LB Advanced Assessment and Monitoring Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of RTH 243.

*Prerequisite(s):* RTH 135LC.

*Corequisite(s):* RTH 241, RTH 241LB, RTH 243, RTH 245LC

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 245LC Clinical Procedures III**

4 credit hours, 16 periods (16 lab)

Continuation of RTH 135LC. Includes clinical assessment of the critical care patient, advanced airway management, advanced respiratory assessment monitoring, adult mechanical ventilation, transport of the critically ill patient, and care decisions in mechanically ventilated adult patients. Also includes hemodynamic assessment of the critically ill patient, observation in various respiratory care delivery environments, interaction with medical director, and case study presentation.

*Prerequisite(s):* RTH 135LC.

*Corequisite(s):* RTH 241, RTH 241LB, RTH 243, RTH 243LB

*Information:* Students must be admitted to the Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 246 Cardiorespiratory Disorders I**

3 credit hours, 3 periods (3 lec.)

Study of commonly encountered respiratory disorders in the adult patient. Includes infectious pulmonary diseases, obstructive pulmonary disease, traumatic injuries of the lungs and chest, pulmonary vascular diseases and disorders of the pleura and chest wall, and various important cardiopulmonary topics.

*Prerequisite(s):* RTH 110, 112, 121, and 121LB.

*Corequisite(s):* RTH 123, RTH 123LB, RTH 124, RTH 125LC, RTH 162

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 251 Specialty Therapeutics**

4 credit hours, 4 periods (4 lec.)

Study of respiratory therapies used in specialized environments. Includes development and care of the fetus, care of the neonatal and pediatric patient, management of ventilation and oxygenation in the neonatal and pediatric patient, transport, home care, and care of the parents, pulmonary rehabilitation, and advanced cardiorespiratory care therapies.

*Prerequisite(s):* RTH 241/241LB, 243/243LB and 245LC.

*Corequisite(s):* RTH 251LB, RTH 255LC, RTH 256, RTH 257LB

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 251LB Specialty Therapeutics Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of RTH 251.

*Prerequisite(s):* RTH 241/241LB, 243/243LB and 245LC.

*Corequisite(s):* RTH 251, RTH 255LC, RTH 256, RTH 257LB

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 255LC Clinical Procedures IV**

4 credit hours, 16 periods (16 lab)

Continuation of RTH 245. Includes clinical assessment, advanced airway management and advanced respiratory assessment monitoring of the neonatal/pediatric patient, mechanical ventilation and care decisions for the adult and neonatal/pediatric patient, observation and participation in various respiratory care delivery environments, and case study presentation preparation.

*Prerequisite(s):* RTH 241/241LB, 243/243LB and 245LC.

*Corequisite(s):* RTH 251, RTH 251LB, RTH 256, RTH 257LB

*Information:* Students must be admitted to the PCC Respiratory program and obtain consent of the Respiratory Care department before enrolling in this course.

**RTH 256 Cardiorespiratory Disorders II**

3 credit hours, 3 periods (3 lec.)

Continuation of RTH 246. Includes neuromuscular disorders affecting ventilation, neoplastic diseases of the lung and environmental lung diseases. Also includes assessment of the developing fetus and the neonate, cardiovascular disorders and congenital anomalies of the newborn, cardiopulmonary disorders of the newborn, and pediatric cardiopulmonary disorders.

*Prerequisite(s):* RTH 241, 243, 245 and 246.

*Corequisite(s):* RTH 251, RTH 251LB, RTH 255LC, RTH 257LB

*Information:* Students must be admitted to the PCC Respiratory program and obtain consent of the Respiratory Care department before enrolling in this course.

**RTH 257LB Clinical Applications and Professional Development**

1 credit hour, 4 periods (4 lab)

Completion of clinical application projects. Includes preparation of resumes, review for and completion of computerized self-assessment exams for credentialing, and interaction with licensure and national credentialing organizations. Also includes participation in a respiratory related service learning project and professional development through shared reporting.

*Prerequisite(s):* RTH 241/241LB, 243/243LB and 245LC.

*Corequisite(s):* RTH 251, RTH 251LB, RTH 255LC, RTH 256

*Information:* Students must be admitted to the PCC Respiratory Care program and obtain consent from the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

**RTH 295 Independent Research in Respiratory Therapy**

.5-4 credit hours, 1.5-12 periods (1.5-12 lab)

Experience in scientific laboratory or field research in respiratory therapy.

*Information:* This course is open only to those students who have been admitted to the RTH program. Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of twelve credit hours.

## Science for Teachers

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**SCT 280 Process of Science for Elementary Educators I**

3 credit hours, 3 periods (3 lec.)

Interdisciplinary, hands-on, inquiry-based science for elementary educators. Includes the nature of science, integrating science in the elementary school classroom, technology and society, matter and energy, the universe, structure of life and organism in their environment.

*Prerequisite(s):* BIO 105, MAT 141 or MAT 142, and one of the following: AST 101IN, AST 102IN; CHM 121IN, CHM 130IN, CHM 151IN; GEO 101, GEO 102; GLG 102IN; or PHY 121IN.

*Information:* Designed for elementary education majors. Prerequisite(s) may be waived with Elementary or Secondary Teacher Certification. Does not meet AGEC requirements for science.

**SCT 281 Process of Science for Elementary Educators II**

3 credit hours, 3 periods (3 lec.)

Continuation of SCT 280. Includes integrating additional science in the elementary school classroom, human health, human society, applying science and technology, patterns and relationships, historical perspectives, and critical thinking processes.

*Prerequisite(s):* SCT 280.

*Information:* Designed for elementary education majors. Prerequisite(s) may be waived with Elementary or Secondary Teacher Certification. Does not meet AGEC requirements for science.

## Science Summer Career Academy

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**SCA 100EP Career Choices in STEM: Physics and Engineering**

2 credit hours, 2 periods (2 lec.)

Introduction and exploration of the various careers available in engineering and physics. Includes college preparation, university transfer skills, developing a career goal and educational action plan, interviewing strategies and practices, and the fundamentals of physics, engineering, and mathematics.

**SCA 100ST Career Choices in STEM: Science**

2 credit hours, 2 periods (2 lec.)

Introduction and exploration of the various careers available in science. Includes college preparation, university transfer skills, developing a career goal and educational action plan, interviewing strategies and practices, and the fundamentals of chemistry, biology, geology, and mathematics.

## Social Services

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**SSE 110 Introduction to Social Welfare**

3 credit hours, 3 periods (3 lec.)

Introduction to the social welfare system. Includes social welfare as an institution, development of the social work profession, generalist social work practices, poverty and public welfare, social and economic injustice, social problems and special populations, and community resources and directories.

**SSE 111 Group Work**

3 credit hours, 3 periods (3 lec.)

Examination of group dynamics using experiential learning. Includes goals, communication patterns, leadership, power and influence, decision-making, conflict resolution, controversy, creativity, problem solving, diversity, and personal growth within groups. Also includes application of concepts through observation, group exercises, and case studies.

**SSE 121 Study of Substance Use Disorders**

3 credit hours, 3 periods (3 lec.)

Introduction to the study of substance use disorders in the United States. Includes history of substance use and historical development of prohibitions, classification and effects of substances, diagnosis and assessment of substance use disorders, theories of addiction and treatment strategies, and funding sources for treatment programs. Also includes cross-cultural perspectives; co-occurring disorders and integrated treatment modalities; treatment interventions; special populations; ethical issues; and education, resources, and prevention.

**SSE 123 Prevention of Substance Use Disorders**

3 credit hours, 3 periods (3 lec.)

Comprehensive review of approaches to prevention of substance use disorders. Includes principles of prevention; risk factors, protective factors, resilience; and systems-oriented and client-oriented prevention strategies. Also includes controversial prevention issues, client-oriented prevention programs and funding, the role of media and social marketing, law enforcement and regulatory agencies, special populations, prevention in the workplace, and program evaluation.

**SSE 128 Introduction to Behavioral Health**

3 credit hours, 3 periods (3 lec.)

Introduction to the behavioral health care system in southern Arizona. Includes providing excellent service, ethics and boundaries, engagement and clinical documentation, introduction to service planning and covered services, management of complex needs, and strength-based behavioral health general assessment training. Also includes demographic data set, court-ordered treatment, covered services, behavioral health enhanced assessment training, and clinical training standardized self-study modules.

**SSE 140 Domestic Violence: Causes and Cures**

3 credit hours, 3 periods (3 lec.)

Overview of historical and contemporary causes of domestic violence. Includes laws and law enforcement; societal attitudes, beliefs, and perceptions; populations victimized, and diagnosis and treatment techniques. Also includes community resources, treatment centers, and support groups; cultural awareness, special populations at risk, and theories explaining the prevalence of domestic violence.

**SSE 146 Child Abuse Intervention and Protection**

3 credit hours, 3 periods (3 lec.)

Overview of the scope and nature of child abuse and neglect. Includes child abuse from a historical and cultural perspective, context of the family and child development; analyzing dynamics, identifying symptoms and assessing risks; short-term and long-term effects of child abuse, intervention and the roles of professionals, and prevention of child abuse.

**SSE 160 Introduction to Youth Services**

3 credit hours, 3 periods (3 lec.)

Introduction to the field of youth services as offered through voluntary youth organizations, social service and child welfare agencies, juvenile detention and correctional agencies and community health care agencies. Includes youth services for children, dependent children, delinquent children, challenged and special needs youth, and practice issues and prevention in youth services.

**SSE 170 Community Health Advisor**

3 credit hours, 3 periods (3 lec.)

Preparation of community health advisors for outreach, disease prevention, advocacy, education, and referral services within prescribed communities. Includes health and wellness, national and local history of community health work programs, communication and relationship building skills; self-care, problem solving, and decision making; presentation skills, case management and home visits, dealing with challenging situations, professional issues, and community organization and mobilizing for action.

**SSE 204 Counseling in a Multicultural Setting**

3 credit hours, 3 periods (3 lec.)

Concepts, techniques, and skills in values, perceptions, attitudes, and behaviors emphasizing intercultural communication patterns within a counseling setting. Includes culture and counseling, profiles of Americans, profiles of special populations, differences, cultural elements in counseling, dynamic factors, common terminology, disparities in treatment, counseling, and counseling theories.

*Recommendation:* Completion of SSE 110 before enrolling in this course. Those students pursuing the Behavioral Health Certificate are highly recommended to complete BHS 132 before enrolling in this course.

**SSE 205 Case Report Writing**

3 credit hours, 3 periods (3 lec.)

Introduction to the principles, concepts, techniques and necessary skills to create and maintain case report records. Includes case report writing elements, report writing considerations, report content, ethical and legal issues, current trends in behavioral health case report writing, and cultural competence.

**SSE 210 Community Organization and Development**

3 credit hours, 3 periods (3 lec.)

An examination, principles, and techniques of community organizing to effect change in America. Includes current conditions, theoretical frameworks for action, community change and professional practice, knowing your community, people as a valuable resource, planning for action, resource development, targeted outreach, community development and coalition building, strategies for institutional change, and government structure and legislative lobbying.

*Prerequisite(s):* SSE 110.

**SSE 211 Group Technique Applications**

3 credit hours, 3 periods (3 lec.)

Application of advanced concepts in group dynamics. Includes skill development and preparation for group facilitation in the community through in-class experiential learning. Also includes community-group case studies, ethical standards, and multicultural issues.

*Prerequisite(s):* SSE 111.

**SSE 220 Treatment of the Substance Use Disorders**

3 credit hours, 3 periods (3 lec.)

Principles and techniques of treating substance use disorders. Includes definition and dynamics of substance use disorders, treatment continuum, treatment models or modalities, treatment plans, case studies, withdrawal, value clarification, and integration of treatment and case management skills.

**SSE 222 Political, Legal and Ethical Aspects of Substance Use**

3 credit hours, 3 periods (3 lec.)

Overview of substance use and the law. Includes historical and legal overview; ethics, standards, and ethical decision making; major drug legislation and court decisions, substances, major psychoactive drugs, the government and the criminal justice system, international drug trafficking, and U.S. law enforcement.

**SSE 224 Substance Use Disorders Among Diverse**

3 credit hours, 3 periods (3 lec.)

Examination of and focus on understanding racial and ethnic differences in the prevalence of substance use disorders. Includes culture and substance use disorders, ethnic and racial groups, profiles of special populations, differences, cultural elements and relationships, dynamic factors, common terminology, counseling, and counseling theories.

**SSE 242 Crisis Intervention, Theory and Techniques**

3 credit hours, 3 periods (3 lec.)

Principles and practice of crisis intervention. Includes crisis intervention theory, skills of crisis intervention, handling specific types of crises, crises worker issues and challenges, and community response to crises.

**SSE 281 Social Service Delivery Systems**

3 credit hours, 3 periods (3 lec.)

Study of the social service delivery system. Includes the profession of social work, social work roles, service delivery systems, special and diverse populations, and diversity issues related to service delivery.

*Prerequisite(s):* SSE 110 or concurrent enrollment.

*Information:* Requires 40 hours of classroom-mediated community agency contact.



**SSE 285 Foundations of Social Work Practice**

3 credit hours, 3 periods (3 lec.)

Theoretical foundation and skill base for effective culturally competent communication and interviewing with individuals, families, small groups, and larger systems. Includes framework for multicultural understanding and social work practice, interpersonal communication in professional helping relationships, major helping and developmental theories, and personal and professional development.

*Prerequisite(s):* SSE 110

*Recommendation:* Completion of SSE 281 before enrolling in this course, or concurrent enrollment.

**SSE 290 Youth Services Field Experience**

4 credit hours, 10 periods (1 lec., 9 lab)

Supervised placement in a community youth-serving agency. Includes regular supervisory service with agency supervisors, orientation to agencies and organizations in the community, evaluation of student performance, site visits, assistance with resume writing, classroom seminars, and completion of written assignments and documentation.

*Prerequisite(s):* SSE 160 and 285 (or concurrent enrollment in SSE 285).

*Information:* This course requires 135 hours of supervised placement in a community youth-servicing agency. May be taken two times for a maximum of eight credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. Consent of instructor is required before enrolling in this course.

**SSE 292 Social Services Field Experience**

4 credit hours, 10 periods (1 lec., 9 lab)

Supervised placement in a community social service agency. Includes regular supervisory service with agency supervisors, orientation to agencies and organizations in the community, evaluation of student performance, site visits, assistance with resume writing, classroom seminars, and completion of written assignments and documentation.

*Prerequisite(s):* SSE 281 and 285 (or concurrent enrollment in SSE 285).

*Information:* This course requires 135 hours of supervised placement in a social service agency. Students pursuing the AAS Substance Use Disorders Specialty must complete the supervised placement in an agency addressing substance use disorders. May be taken two times for a maximum of eight credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. Consent of instructor is required before enrolling in this course.

**SSE 293 Community Health and Development Field Experience**

4 credit hours, 10 periods (1 lec., 9 lab)

Supervised placement in a community-based social service agency offering services focused on wellness programs or community health and development. Includes regular supervisory service with agency supervisors, orientation to agencies and organizations in the community, evaluation of student performance, site visits, assistance with resume writing, classroom seminars, and completion of written assignments and documentation.

*Prerequisite(s):* SSE 170.

*Information:* Consent of instructor is required before enrolling in this course. This course requires 135 hours of supervised placement in an agency focused on wellness programs or community health and development.

**SSE 296 Independent Study in Social Services**

1-3 credit hours, 3-9 periods (3-9 lab)

Advanced projects, research and learning in the social services. Content to be determined by conference between student and instructor.

*Information:* Consent of instructor is required before enrolling in this course. May be taken three times for a maximum of nine credit hours.

## Sociology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**SOC 101 Introduction to Sociology**

3 credit hours, 3 periods (3 lec.)

Introduction to the basic concepts of sociology, sociological analysis and research. Includes social structure, status, social group, social control, social stratification, social class, gender, race, sexuality, ethnicity, aging, learning and physical challenges, family, religion, education, government, health, technology, corporations, terrorism, environmental sustainability, social movements and social change, mass society, and postmodernity. Also includes globalization within and across contemporary societies and cultures.

**SOC 110 Introduction to Cities and Global Society**

3 credit hours, 3 periods (3 lec.)

Introduction to the study of the urban environment. Includes exploring the city, city form and city culture, urban diversity, and urban and global dilemmas and possible solutions. Also includes a special emphasis on understanding cities and the impact of globalization at community, national, and international levels.

*Information:* Same as GLS 110.

**SOC 120 Current Social Problems**

3 credit hours, 3 periods (3 lec.)

Analysis of the causes, effects, and solutions to current social problems. Includes the causes, effects, and the complexity of solutions to current social problems in behavioral variance, inequality, social institutions, and global issues.

*Recommendation:* Completion of SOC 101 before enrolling in this course.

**SOC 127 Marriage and the Family**

3 credit hours, 3 periods (3 lec.)

Introduction to the social functions of marriage and the family. Includes structures of marriages and families, relationships, marriage, and transformation of marriage.

**SOC 130 Social World of Drugs**

3 credit hours, 3 periods (3 lec.)

Introduction to the social aspects of the use and abuse of drugs in the United States. Includes evolution of drug use, pharmacology, social and medical aspects of drugs, the business of drugs, sociological explanations of drug use and abuse, and social issues, policy, and politics.

*Recommendation:* Completion of SOC 101 before enrolling in this course.

**SOC 166 Social Gerontology**

3 credit hours, 3 periods (3 lec.)

Introduction to the social aspects of aging and the aged. Includes the concept of the life course, the demographics of a graying United States, myths and facts about aging, sociological theories on aging, historical and cross-cultural analyses of aging, age norms, family patterns in later life, retirement patterns, living environments in later life, the social meaning of death and dying, the economics of aging, the politics of aging, social services for older Americans and religion and aging.

**SOC 201 Race, Ethnicity, Minority Groups and Social Justice**

3 credit hours, 3 periods (3 lec.)

Social processes involved in the construction of difference. Includes race, ethnicity, minority groups, nationality, and social justice. Also includes the analysis of social, political, cultural, religious, economic and historical formations with special reference to current global trends, social conflict, and change.

**SOC 204 Gender Identities, Interactions and Relations**

3 credit hours, 3 periods (3 lec.)

Examination of the social structures and processes related to gender in society. Includes sex versus gender, theoretical perspectives, politics past and present, gender and the family, love and marriage, and masculinity. Also includes gender in the workplace, in the media, religion, and medicine, and global perspectives.

**SOC 215 Human Sexuality**

3 credit hours, 3 periods (3 lec.)

Examination of human sexual experience throughout the life cycle, viewed from sociological and psychological perspectives. Includes psychological, sociological, and cultural legacy of sexuality, biological foundations of sexuality, varieties of sexual behaviors, sexuality and the life cycle, sexual problems, and social issues.

*Recommendation:* Completion of one of the following before enrolling in this course: PSY 100A or 100B or 101 or SOC 101. REA 091 with a C or better (or assessment into REA 112).

*Information:* Same as PSY 215.

**SOC 296 Independent Study in Sociology**

3 credit hours, 3 periods (3 lec.)

Exploration of special interest areas. Includes sociological question(s), methodological research design, implementation of viable research, data analysis using sociological theories, and presentation of findings.

*Information:* Activities determined by conference between student and instructor related to content of this course. May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

## Solar Technologies

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### SLR 101 Beginning Photovoltaic Installation

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to photovoltaic energy and photovoltaic (PV) system installation. Includes markets and applications, safety basics, electricity basics, energy efficient appliances, solar energy fundamentals, photovoltaic materials, module fundamentals, concentrators, system components, system sizing, electrical design, mechanical design, and performance analysis and troubleshooting.

**Information:** This course specifically provides preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Certification exam.

### SLR 102 Advanced Photovoltaic Installation

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of SLR 101. Includes advanced photovoltaic (PV) energy and system installation training. Also includes safety basics, stand-alone PV system sizing, grid-tied system sizing, National Electric Code (NEC) compliant wire sizing, grounding of PV systems, site analysis and array mounting, and PV system commissioning, troubleshooting, maintenance and performance evaluation.

**Information:** This course specifically provides preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Advanced Certification exam.

### SLR 130 Solar Hot Water Systems

4 credit hours, 6 periods (3 lec., 3 lab)

Introduction to solar thermal systems. Includes the types, maintenance, performance, controls, site selection considerations, performance estimating and testing. Also includes related mathematics, copper piping practices, soldering and brazing, basic heat transfer, and basic principles of hydronics.

**Prerequisite(s):** BCT 105 and 107.

**Information:** BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

## Spanish

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### SPA 085 Introductory Spanish

4 credit hours, 4 periods (4 lec.)

Beginning Spanish for students with no previous formal study of the language. Includes correct pronunciation, basic grammar and conversation, and common communications such as informal greetings and numbers.

**Information:** This course is not for transfer, but helps prepare students for success in transferable courses.

### SPA 101 Elementary Spanish I

4 credit hours, 4 periods (4 lec.)

Introduction to Spanish. Includes basic listening, reading, and writing skills and cultural and geographic awareness.

**Prerequisite(s):** Required score on Spanish assessment test.

### SPA 101HN Elementary Spanish I: Honors

4 credit hours, 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading and writing and cultural and geographical awareness. Also includes additional Honors content.

**Prerequisite(s):** Required score on Spanish assessment test.

**Information:** Must qualify for Honors program. SPA 101HN will fulfill any SPA 101 requirement. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**SPA 102 Elementary Spanish II**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 101. Includes further development of oral and written forms, additional grammatical structures, interpersonal transactions, and geographical and cultural differences. Also includes an emphasis on balancing more complex structures with active communication.

*Prerequisite(s): SPA 101 with a grade of C or better or required score on Spanish Assessment.*

*Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.*

**SPA 102HN Elementary Spanish II: Honors**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 101. Includes further development of oral and written forms, additional grammatical structures, interpersonal transactions, and geographical and cultural differences. Also includes an emphasis on balancing more complex structures with active communication. Also includes additional Honors content.

*Prerequisite(s): SPA 101 with a grade of B or better or required score on Spanish Assessment.*

*Information: Must qualify for Honors program. SPA 102HN will fulfill any SPA 102 requirement. Prerequisites may be waived with one year of high school Spanish. See an instructor, advisor, or counselor. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in format appropriate for the discipline with research presented in class or to a wider audience.*

**SPA 103 Beginning Spanish for Heritage and Bilingual Learners**

4 credit hours, 4 periods (4 lec.)

Spanish for heritage and bilingual learners. Includes basic oral and written forms for heritage and bilingual learners, grammatical structures, cultural and stylistic elements, interpersonal transactions, and geographical and cultural awareness. Also includes an awareness of diversity of Spanish-speaking cultures. required score on Spanish assessment test.

*Information: Ability to speak basic Spanish is required.*

**SPA 201 Intermediate Spanish I**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 102. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and using a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking and listening.

*Prerequisite(s): SPA 102 with a C or better or required score on Spanish Assessment.*

**SPA 201HN Intermediate Spanish I: Honors**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 102. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking and listening. Also includes additional Honors content.

*Prerequisite(s): SPA 102 with a grade of B or better or required score on Spanish Assessment.*

*Information: Must qualify for Honors program. SPA 201HN will fulfill any SPA 201 requirement. Faculty or Advisor approval may be required before enrolling in this course. Instructor or advisor/counselor approval may be required before registering for this course. Honors content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.*

**SPA 202 Intermediate Spanish II**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 201. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking, and listening. Also includes reading selections from authentic media, advanced conversation and discussions, and compositions using intermediate grammar structures.

*Prerequisite(s): SPA 201 with a C or better or required score on Spanish Assessment.*

**SPA 202HN Intermediate Spanish II: Honors**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 201. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking, and listening. Also includes reading selections from authentic media, advanced conversation and discussions, and compositions using intermediate grammar structures. Also includes additional Honors content.

*Prerequisite(s):* With a grade of B or better: SPA 201 or required score on Spanish Assessment.

*Information:* Must qualify for Honors program. SPA 202HN will fulfill any SPA 202 requirement. Faculty or Advisor approval may be required before enrolling in this course. Instructor or advisor/counselor approval may be required before registering for this course. Honors content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**SPA 203 Writing & Oral Skills for Heritage & Bilingual Learners**

4 credit hours, 4 periods (4 lec.)

Continuation of SPA 103. Includes further development of oral and written forms for heritage and bilingual learners, additional grammatical structures, cultural and stylistic elements, interpersonal transactions, and geographical and cultural differences. Also includes a continued awareness of the diversity of Spanish.

*Prerequisite(s):* SPA 103 with a C or better or required score on Spanish Assessment.

*Information:* Ability to speak Spanish is required.

**SPA 251 Intermediate Spanish III**

3 credit hours, 3 periods (3 lec.)

Intensive writing and speaking in Spanish for second language learners of Spanish. Includes intermediate oral communication, complex reading communication, intermediate written communication, and themes in popular and traditional cultures.

*Prerequisite(s):* SPA 202 or required score on Spanish assessment test.

**SPA 253 Intermediate Spanish for Heritage and Bilingual Learners**

4 credit hours, 4 periods (4 lec.)

Intensive writing and speaking in Spanish for heritage and bilingual learners. Includes intermediate oral communication, complex reading communication, intermediate written communication, and themes in popular and traditional cultures.

*Prerequisite(s):* SPA 203 with a C or better or required score on Spanish Assessment.

*Information:* Ability to speak, read, and write Spanish is required.

**SPA 254 Interm Grammar/Writing for Span Heritage/Bilingual Learners**

3 credit hours, 3 periods (3 lec.)

Continuation of SPA 253. Includes intensive grammar and writing for heritage and bilingual learners within a dynamic cultural context. Includes complex intermediate oral communication, intermediate grammar and writing communication, exploration of diversity of culture and customs, and themes in literature.

*Prerequisite(s):* SPA 253.

*Information:* Prerequisites may be waived with ability to speak, read, and write Spanish.

**SPA 296 Independent Study in Spanish**

1-4 credit hours, 1-4 periods (1-4 lec.)

Independent Spanish readings or other projects under the supervision of an instructor.

*Information:* Consent of instructor is required before enrolling in this course. *Information:* May be taken two times for a maximum of eight credit hours.

## Student Success

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**STU 100 College Study Skills**

1 credit hour, 1 periods (1 lec.)

Introduction to the skills for being a successful, confident college student, including study strategies, college resources, time management and life choices.

**STU 102 Personal Finance**

1 credit hour, 1 periods (1 lec.)

Examination of financial practices students can use to build a strong financial foundation for their future. Includes budgeting, examining expenses, increasing income, minimizing college and other sources of debt, and exploring investment and insurance fundamentals. Also includes making informed personal finance decisions that lead to greater financial independence and increased personal success throughout life.

**STU 105 Math Success Skills**

1 credit hour, 1 periods (1 lec.)

Confidence and skills to successfully master math classes. Includes personal learning styles, identifying math degree requirements and designing the course sequences necessary for graduation. Also includes strategies to reduce anxiety with math and test taking.

**STU 106 Making Career Choices: Interests and Values**

1 credit hour, 1 periods (1 lec.)

Development of skills and knowledge necessary to make a career selection. Includes career exploration and self-assessments, choosing an occupational area or specific career, and researching potential career opportunities. Also includes programs of study and degree requirements.

*Information:* STU 106 is a one credit hour version of STU 109 that concentrates on self-assessment inventories, career research, and degree identification.

**STU 107 University Transfer Preparation**

1 credit hour, 1 periods (1 lec.)

Preparation of a plan for a successful transition to a college or university. Includes clarification of transfer degree/major based on career and academic interests; introduction to and awareness of transfer resources, financial resources, and college funding; development of a personal education plan for transfer; and general transition planning.

*Prerequisite(s):* REA 081

*Recommendation:* Concurrent enrollment in or completion of REA 091 and WRT 090. Completion of this course before completing 30 college credits.

**STU 109 Making Career Choices**

2 credit hours, 2 periods (2 lec.)

Development of skills and knowledge necessary to make a career selection. Includes career exploration and self-assessments, choosing an occupational area or specific career, and researching potential career opportunities. Also includes degrees and programs of study, goal setting, and job seeking skills.

*Information:* STU 109 is a 2 credit hour version of STU 106 that expands the career exploration process to include skills and strategies necessary to secure employment in the future.

**STU 112 Strategies for Taking Control of Your Future**

.25 credit hours, .25 periods (.25 lec.)

Development of an educational plan based on career expectations. Includes strategies for success, setting a career direction, and taking control of the future.

*Information:* Students cannot receive credit for both STU102 and STU112.

**STU 121 Adult College Re-entry Skills**

3 credit hours, 3 periods (3 lec.)

Enhance academic, professional, and personal skills to maximize learning and success as an adult college student. Includes career exploration; self-assessments; development and enhancement of employability skills; college success skills; college and community resources; and personal, academic, and financial goals. Also includes confidence building, diversity awareness, and enhancement of communication skills.

*Recommendation:* Completion of REA 081 before enrolling in this course or concurrent enrollment. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**STU 135 Stress Management**

1 credit hour, 1 periods (1 lec.)

Principles and techniques for managing stress and living a healthier life style. Includes factors that impact stress in daily life and the positive influence of wellness practices, such as observing healthy nutrition habits, maintaining physical fitness, and managing stressful situations.



**STU 150 Becoming a Master Student**

3 credit hours, 3 periods (3 lec.)

Enhance academic, professional, and personal skills to maximize learning and success at the college level. Includes critical thinking skills, learning styles, college and/or career goals, study and interpersonal skills. Also includes examination of values, human diversity and perspectives, as they relate to academic and personal success.

*Recommendation:* Completion of REA 091 and WRT 090 before enrolling in this course or concurrent enrollment.

**STU 200 Becoming a Critical Thinker**

3 credit hours, 3 periods (3 lec.)

Introduction to the development and application of critical thinking strategies. Includes fundamentals of critical thinking and application of thinking skills to everyday issues. Also includes exploration of the following topics: bias, perception, and beliefs; critical questioning; reporting, inferring and judging; argumentation; language and thought; creativity and critical thinking; and critical thinking about the media.

*Recommendation:* Completion of REA 091 before enrolling in this course or concurrent enrollment. If any recommended course is taken, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**STU 210 Transfer Strategies**

2 credit hours, 2 periods (2 lec.)

Exploration of the application process for transitioning to a college or university. Includes financial aid, registration requirements for the upcoming semester, and the development of a transfer plan that supports individual academic and career goals.

*Information:* This class requires students to meet at the University of Arizona on specific days and participate in campus adventures. *Recommendation:* Consult with a counselor or advisor prior to enrolling in this course. Completion or near completion of the AGEC-A, B, or S is highly recommended.

**STU 230 Dynamics of Leadership**

3 credit hours, 3 periods (3 lec.)

Overview of the theoretical and applied foundations of leadership. The theoretical component includes the historical and contemporary theories and models of leadership, effective followership, multiculturalism, and ethics. The applied component includes the importance and use of vision and mission, inclusive leadership practices, responding to change, developing a personal philosophy of leadership, and creating a personal profile of strengths and assets. Communication and facilitation skills will be practiced with the completion of a leadership project.

*Information:* Same as MGT 230.

## Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**TEC 100 Introduction and Overview of Electronics**

3 credit hours, 4 periods (2 lec., 2 lab)

Examination of the principles and techniques of basic electrical concepts. Includes fundamentals of electricity, current, voltage, resistance, Ohm's Law, electrical measurements, meters, power, DC circuits, magnetism, inductance, capacitance, alternating current, transformers, and AC circuits. Also includes the language of electronics and the mathematical foundations relative to the electronics industry.

**TEC 101 Physics for Technology**

3 credit hours, 3 periods (3 lec.)

Fundamentals of applied physics for technology. Includes matter, motion, forces, work and energy, fluids, temperature and heat, wave motion, electricity, direct current electricity, magnetism, alternating current, electronic devices, and light.

*Prerequisite(s):* MAT 095 or 097 or 122 or 122Z or 123 or TEC 111.

**TEC 103 Light and Optical Systems**

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction to light and optical systems used in photolithographic processes and equipment in semiconductor manufacturing. Includes the electromagnetic spectrum, basic principles of light, light sources, interaction between matter and light, optics terminology, and standing waves. Also includes filters, microscopes, photolithography, and optical fibers.

*Prerequisite(s):* TEC 113.

**TEC 105 Electronic Assembly Tools**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduces hand tools and measuring devices used in electronics and electromechanical assemblies. Includes basic and special assembly tools; fastener installation and removal tools; precision measuring tools; fabrication tools; and torque and optical measuring instruments. Also includes an emphasis on required safety procedures and practices and the use of selected tools, measuring devices, and procedures.

**TEC 111 Applied Math I**

2 credit hours, 2 periods (2 lec.)

Introduction to numerical operations in measurement and systems of units. Includes geometric figures, waveshapes, scale drawings, collection of data, display of data, and data calculations. Also includes basic algebraic and numeric expressions, scientific notation, and instruction on using the hand-held calculator.

**TEC 112 Applied Math II**

2 credit hours, 2 periods (2 lec.)

Continuation of TEC 111. Includes graphing, linear equations, functional notation, quadratic equations, and solving systems of linear equations. Also includes many examples and exercises pertaining to electrical, magnetic, fluidic, thermal, and mechanical systems; and layout and analysis of resistor, diode, and transistor circuits using a circuit simulation program.

*Prerequisite(s):* TEC 111.

**TEC 113 Problem Solving for Electronics and Optics**

3 credit hours, 3 periods (3 lec.)

Problem solving for electronics and optics. Includes exponents and radicals, logarithmic and exponential functions, application of equations, resistive-capacitive and resistive-inductive transient behavior, trigonometric considerations, circular functions, vectors and phasors, mathematics of phasors, alternative current and circuits, and sinusoidal alternating current. Also includes coordinate systems, the conic sections, trigonometric identities, complex exponentials, Euler's formula, and examples in optics.

*Prerequisite(s):* MAT 095 or 097 TEC 112 or required score on the mathematics assessment test.

**TEC 117 Optical Assembly Techniques**

3 credit hours, 4 periods (2 lec., 2 lab)

Fundamental procedures used during the assembly of optical equipment. Includes vibration isolation, epoxy and curing, mounting optics, alignment aids, assembly and disassembly techniques, fasteners, and materials. Also includes thermal considerations, vibration mounting of components, baffles, hermetic sealing, and metal finishing.

*Recommendation:* Completion of TEC 116 before enrolling in this course.

**TEC 121 Basic Electric and Magnetic Properties**

3 credit hours, 3 periods (3 lec.)

Introduction to AC, DC, and magnetic circuit theory. Includes passive devices, terminology, basic laws, network calculations, electrical measurements, instruments, and units. Also includes use of hand tools, safety, use of schematic and block diagrams, troubleshooting, and electronic circuit applications.

*Prerequisite(s):* TEC 100 and 111.

*Corequisite(s):* TEC 121LB

**TEC 121LB Basic Electric and Magnetic Properties Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 121.

*Prerequisite(s):* TEC 100 and 111.

*Corequisite(s):* TEC 121

**TEC 122 Applied Semiconductor Devices**

3 credit hours, 3 periods (3 lec.)

Basic semiconductor theory and applications. Includes measurement, component selection, effects of the environment on components, component protection, and applications. Also includes diodes, transistors, integrated circuits with operational amplifiers, and regulated power supplies.

*Prerequisite(s):* TEC 113 and 121.

*Corequisite(s):* TEC 122LB

**TEC 122LB Applied Semiconductor Devices Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 122.

*Prerequisite(s):* TEC 113 and 121.

*Corequisite(s):* TEC 122

**TEC 123 Digital Circuits and Computers**

3 credit hours, 3 periods (3 lec.)

Introduction to the theory, operation, and application of digital components used in combinational and sequential logic. Includes number systems; Boolean algebra; gates and invertors; digital measurements and test equipment; memory; error detection; convertors; programmable logic arrays; microprocessor basics; and technical information.

*Corequisite(s):* TEC 123LB

**TEC 123LB Digital Circuits and Computers Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 123.

*Corequisite(s):* TEC 123

**TEC 125 AC Networks with Phasors**

3 credit hours, 3 periods (3 lec.)

Applications of trigonometry and the algebra of complex numbers to AC circuits safety, troubleshooting, analysis, measurement, and design. Includes phasors, transfer functions, three phase power, filters, concepts of Fourier analysis, impedance matching, RLC circuits, waveshaping, and transmission lines at high AC frequencies.

*Prerequisite(s):* TEC 113 and 121.

*Corequisite(s):* TEC 125LB

**TEC 125LB AC Networks with Phasors Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 125.

*Corequisite(s):* TEC 125

**TEC 126 Electronics Construction and Assembly**

3 credit hours, 4 periods (2 lec., 2 lab)

Basic skills in construction and assembly of electronic equipment. Includes soldering through-hole and surface mount components; reading and interpreting internal electronic wiring schematics; and mechanical assembly diagrams. Also includes performing printed circuit board construction; wiring and cabling construction; terminations; and chassis construction.

*Prerequisite(s):* TEC 100, 105, and 111.

**TEC 127 Printed Circuit Board Solder Assembly**

3 credit hours, 4 periods (2 lec., 2 lab)

Advanced skills for assembly of electronic equipment. Includes wire and terminals connections; through-hole and surface mount soldering of components; printed circuit board requirements; coatings and encapsulations; and rework, repair and inspection methodology. Also included IPC standards to prepare student for IPC J-STD-001 Certification by exam.

*Prerequisite(s):* TEC 100, 105 and 111.

*Corequisite(s):* TEC 126

**TEC 128 Electronic Measurements**

2 credit hours, 2 periods (2 lec.)

Techniques to perform measurements on passive and active component circuits. Includes measurement standards; types of meters; parameters of passive and active devices; harmonic and inter-modulation distortion; radio frequency modulation; operation and measurements of the oscilloscope; and the distortion analyzer.

*Prerequisite(s):* TEC 122 and 125.

*Corequisite(s):* TEC 128LB

**TEC 128LB Electronic Measurements Lab**

1 credit hour, 2 periods (2 lab)

This is the Lab portion of TEC 128.

*Corequisite(s):* TEC 128

**TEC 130 Computer Assembly and Testing**

3 credit hours, 3 periods (3 lec.)

Computer system assembly, set-up, and start-up. Includes computer systems overview, safety precautions, support equipment, operating systems, system assembly, system start-up, troubleshooting, and peripheral connections.

*Corequisite(s):* TEC 130LB

**TEC 130LB Computer Assembly and Testing Lab**

1 credit hour, 2 periods (2 lab)

This is the Lab portion of TEC 130.

*Corequisite(s):* TEC 130

**TEC 132 Computer Systems Servicing**

3 credit hours, 3 periods (3 lec.)

Advanced computers servicing and peripherals installation. Includes an introduction to computer servicing, laser and ink-jet printers, troubleshooting of printers, safety and troubleshooting of monitors, floppy disk drives, hard disk drives/optical drives, operating systems, application programs, and network basics.

*Prerequisite(s):* TEC 130.

*Corequisite(s):* TEC 132LB

**TEC 132LB Computer Systems Servicing Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 132.

*Corequisite(s):* TEC 132

**TEC 160 Microcomputers and Programming Techniques**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to microcomputer operation. Includes overview and history of the microcomputer, applications, terminology and specifications, software/programming, operating systems, disk operations, programming in BASIC, and introduction to Assembly Language.

*Prerequisite(s):* MAT 092 or TEC 111.

*Information:* Prerequisite maybe waived with consent of instructor.

**TEC 221 Linear Devices**

3 credit hours, 5 periods (2 lec., 3 lab)

Linear devices in electronic systems. Includes overview of linear integrated circuits, the ideal operational amplifier, real operational amplifier parameters, selected linear and non-linear applications and transfer functions, phase lock loops, voltage reference circuits, and voltage regulators. Also includes optoelectronic devices, power supply bypassing, convertors, other selected linear devices, and testing and troubleshooting.

*Prerequisite(s):* TEC 122 and 125.

**TEC 222 Electromechanical Devices and Systems**

3 credit hours, 3 periods (3 lec.)

Prime movers encompassing DC motors, AC motors, synchros, stepper motors, and fluid motors. Includes control systems and the utilization of electronic devices in electromechanical control. Also includes mechanical components of electromechanical systems, electronic components used in motor control systems, sensors, transducers, relays, and solenoids.

*Prerequisite(s):* TEC 221.

*Corequisite(s):* TEC 222LB

**TEC 222LB Electromechanical Devices and Systems Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 222.

*Corequisite(s):* TEC 222

**TEC 225 Fluid Devices and Automated Systems**

2 credit hours, 2 periods (2 lec.)

Application and control of fluid devices using programmable logic devices. Includes microprocessors, software, ladder logic and diagrams, programmable logic controllers (PLCs), and variety of input/output devices used in the automated manufacturing and test environments. Also includes safety and basic physical principles or laws governing the operation of pneumatic and hydraulic devices.

*Prerequisite(s):* TEC 101, 123 and 222.

*Corequisite(s):* TEC 225LB

**TEC 225LB Fluid Devices and Automated Systems Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 225.

*Corequisite(s):* TEC 225

**TEC 228 RF and Microwave Devices**

3 credit hours, 3 periods (3 lec.)

Introduction to electronic communication circuits and methodologies in transmitters and receivers. Includes history and trends in communications technology, the electromagnetic spectrum, resonant circuits, coupling, lumped filters, behavior of devices, amplifiers, receivers, transmitters, and signal sources. Also includes properties, applications, measurements, and specifications of electronic communications components, systems at RF and microwave frequencies, overview of RF components, waveguides, and antennas.

*Prerequisite(s):* TEC 221.

*Corequisite(s):* TEC 228LB

**TEC 228LB RF and Microwave Devices Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 228.

*Corequisite(s):* TEC 228

**TEC 230 Peer-to-Peer Networking and Network Cabling Fundamentals**

3 credit hours, 3 periods (3 lec.)

Introduction to basic networking concepts and cabling standards. Includes the Open System Interconnection (OSI) model of networking, types of networking, multi-user vs. single-user programs, network security, type of connections, and type of cabling.

*Prerequisite(s):* TEC 132/132LB.

*Corequisite(s):* TEC 230LB

*Information:* Prerequisite maybe waived with consent of instructor.

**TEC 230LB Peer-To-Peer Networking and Network Cabling Fundamentals Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 230.

*Corequisite(s):* TEC 230

**TEC 250 Digital Devices**

3 credit hours, 3 periods (3 lec.)

Digital integrated circuits, primarily TTL. Includes power requirements, propagation delay, input and output electrical characteristics, counters, latches, multiplexors, decoders, flip-flops and other digital devices. Also includes digital circuit troubleshooting.

*Prerequisite(s):* TEC 122 and 123.

*Corequisite(s):* TEC 250LB

**TEC 250LB Digital Devices Lab**

1 credit hour, 3 periods (3 lab)

This is the Lab portion of TEC 250.

*Corequisite(s):* TEC 250

**TEC 251 Analog Circuits**

3 credit hours, 3 periods (3 lec.)

Advanced analog circuits which includes subtractors, differential summing amplifiers, instrumentation amplifiers, I-to-V converters, V-to-I converters, integrators, differentiators, active filters, oscillators, comparators, voltage limiters, window detectors, V-to-F converters, F-to-V converters, clippers, clampers, universal active filters, switched capacitor filters, 555 timer applications, phase-locked loops, power amplifiers, and voltage regulators.

*Prerequisite(s):* TEC 221

*Corequisite(s):* TEC 251LB

**TEC 251LB Analog Circuits Lab**

1 credit hour, 3 periods (3 lab)

This is the lab portion of TEC 251. The student will do a capstone project in analog circuits.

*Prerequisite(s):* TEC 221

*Corequisite(s):* TEC 251

**TEC 286 Fiber Optics Installation and Testing**

3 credit hours, 4 periods (2 lec., 2 lab)

Installation and use of optical fibers and related equipment in the optical industry. Includes optics theory, fiber types, cable assembly and installation, testing of cables, special equipment, and survey of applications.

*Prerequisite(s):* TEC 103.

**TEC 287 Laser Fundamentals**

3 credit hours, 4 periods (2 lec., 2 lab)

Fundamentals of lasers and how they are built and used in industry. Includes laser safety, properties of laser light, introduction to quantum mechanics, cavity design, effects of extra cavity feedback and stability, laser types and applications, cooling, and assembly and testing techniques.

*Prerequisite(s):* TEC 103.

**TEC 288 Optical Testing**

4 credit hours, 6 periods (2 lec., 4 lab)

Common techniques and equipment for testing of optical systems and components. Includes optical testing theory, measurement of paraxial parameters, interferometers, non- interferometric tests, and surface profiling.

*Prerequisite(s):* TEC 103.

## Theater

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**THE 104 Voice and Movement for the Actor**

3 credit hours, 4 periods (2 lec., 2 lab)

Principles and practice of voice and movement skills for the actor. Includes phonetics, physical isolation and awareness exercises, development and practice of stage

*dialects, and physicalization of characters. Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.*

**THE 105 Theater Appreciation**

3 credit hours, 3 periods (3 lec.)

An exploration of the theory and practice of the discipline of theatre art. Includes setting the stage for understanding and appreciating theatre arts, the artists, and production of the play.

*Prerequisite(s):* WRT 090 or 101 or 102.

*Information: Students are expected to attend and critique a minimum of one theatrical production. Students may, at the discretion of the instructor, receive additional credit for participation in a PCC theatre production when this participation is not part of the student's requirements for another class.*

**THE 110 Movement and Dance for Actors**

2 credit hours, 3 periods (1 lec., 2 lab)

Physical dynamics of actor training. Includes relaxation and warm-up techniques, vocabulary for movement, use of movement in developing acting skills, and improvisation for scenes and text analysis. Also includes execution of basic dance and movement, history of dance and movement for musical theater, and exercises.

**THE 111 Stagecraft**

3 credit hours, 3 periods (3 lec.)

Principles and the practical application to the operation and techniques of various types of stages and stage scenery. Includes theater organization, geography, shop safety, tools and hardware applications, historic overview, construction design, three-dimensional scenery, and properties research. Also includes acquisition, maintenance, costume design, stage rigging systems, stage lighting, paint, materials handling, measuring, construction, assembly, finishing, rigging, and painting techniques.

*Corequisite(s):* THE 113

**THE 113 Stagecraft Crew**

1 credit hour, 3 periods (3 lab)

Preparing, organizing, setting up, running, and shifting of theatrical sets, properties, and costumes for approved theatrical productions. Includes scenic cost estimates and budget, construction, planning and execution, production deadlines, property acquisition, and props construction. Also includes painting and finishing, stage lighting, scenery shifting; and property organization, distribution, and security.

*Corequisite(s):* THE 111



**THE 118 Basic Theater Graphics**

3 credit hours, 3 periods (3 lec.)

Principles and practice of graphic skills necessary in the planning of theatrical productions. Includes techniques of pencil sketching, study of theatrical drafting conventions, techniques of mechanical drawing, study of mechanical perspective, digital color rendering techniques, study of color theories, and study of computer design applications for theatrical drafting.

**THE 125 Theater Production**

2 credit hours, 6 periods (6 lab)

The practical application of exploratory learning within an ensemble setting. Includes the relating of ideas and possibilities to practical methods, skills and structure of Theatrical Production.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

**THE 140 History of Theater to the 18th Century**

3 credit hours, 3 periods (3 lec.)

Survey of theater, drama and audiences from their origins to the late 18th century. Includes an examination of theatrical architecture, scenic/costume design, acting styles, tragic/comic theories, audience, and literature.

**THE 148 Costume Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Introduction to basic design techniques for theater costumes. Includes identifying and applying elements, sketching and coloring, paper fabrication of costume design, script and character analysis, application of historical research, and production scheduling and budget.

*Information:* Same as FDC 148. May be taken two times for a maximum of six credit hours.

**THE 149 Introduction to Acting I**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to performance techniques and the development of physical skills for effective performance. Includes theatrical codes of behavior, exercise and structured improvisations, control of emotions and body, verbal and non-verbal intentions, emotional recall techniques and exercises, concentration and centering exercises, and physical investment exercises. Also includes physical projection of emotional states, imagery, auditioning, critiques of two productions, maintaining spontaneity, critiques of two productions, maintaining spontaneity, character analysis, playing a character, and monologues and scenes.

**THE 151 Introduction to Acting II**

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of THE 149. Includes advanced theatre game and improvisations, introduction to status and its application, rehearsal conferences, scene presentations, character creation, and language plays.

*Prerequisite(s):* THE 149.

**THE 210 Screen Acting**

2 credit hours, 3 periods (1 lec., 2 lab)

Introduction to film and television acting techniques. Includes special technical aspects of acting before a camera, performance preparation, and conduct of performance.

**THE 220 Stage Lighting**

3 credit hours, 3 periods (3 lec.)

Principles of stage lighting design and practice. Includes historical context, electricity and lamps, fixtures, dimming equipment, control equipment, color media use and handling, design techniques, special effects and set up, and safety procedures. Also includes care, maintenance, proper use of lighting equipment, organization of lighting work, and operation.

*Corequisite(s):* THE 222

**THE 222 Stage Lighting Crew**

1 credit hour, 3 periods (3 lab)

Organizing, setting up and operating of stage lighting for approved theatrical productions. Includes analysis of designer information, cost estimates and budgeting, planning and execution of operations, and control board techniques for rehearsals and performances.

*Corequisite(s):* THE 220

**THE 223 Scene Design**

3 credit hours, 5 periods (2 lec., 3 lab)

Principles of scene design for various types of stage and models of productions. Includes historical context, theater architecture, scenic elements, design process and research, development of working drawings, perspective rendering, color use, period styles in furniture and architecture, and script analysis. Also includes cost estimates, material choices, advanced construction techniques, paint mixing and application techniques, stage furniture overview, and set dressing and finishing.

**THE 245 Principles of Dramatic Structure**

3 credit hours, 3 periods (3 lec.)

Examination and analysis of the structural elements of major dramatic genres. Includes reading the play, stage directions, characters and personages, plot and diction, the actor's body, and the play within context.

**THE 250 Acting: Audition for Theater**

3 credit hours, 4 periods (2 lec., 2 lab)

Acting: Auditioning for Theater Theory and practice of creating sustained character portrayals through the performance of a series of monologues chosen from a broad spectrum of both classical and contemporary theatrical literature. Includes auditioning basics and resume fundamentals, prepared audition scenes in plays, and library and Internet research skills. Also includes contemporary monologue basics and performance, commercial auditioning, prepared audition scenes in film and television, Shakespeare monologue basics, auditioning, and performance of classical monologues.

*Prerequisite(s):* THE 149.

**THE 251 Acting: Shakespeare and Classical Literature**

3 credit hours, 4 periods (2 lec., 2 lab)

Performance-oriented class focuses on the practice and theory of pre-realistic styles of acting, and Shakespeare through the use of verse and prose. Includes the performance and analysis of Farce, Restoration Comedy, Shakespeare and presentation of a Sonnet.

*Prerequisite(s):* THE 149.

**THE 296 Independent Studies in Theater**

1-4 credit hours, 3-12 periods (3-12 lab)

Students work at various assigned tasks in theatrical settings under the guidance of an instructor. Includes the opportunity for the student to design his/her own project with the instructor's approval.

*Information:* Consent of instructor is required before enrolling in this course. May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate.

## Therapeutic Massage

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**TMA 101 Introduction to Massage Therapy**

2 credit hours, 2 periods (2 lec.)

Survey of massage therapy practice including history, overview of bodywork systems, benefits and indications of massage.

**TMA 120 Professionalism and Ethics for Massage Therapists**

2 credit hours, 2 periods (2 lec.)

Overview of the ethics and professionalism related to an effective, successful massage therapy/bodywork practice. Includes general ethical principles of practice and professional dress, conduct, boundaries and communication.

**TMA 201IN Therapeutic Massage Practices I**

6 credit hours, 9 periods (3 lec., 6 lab)

Principles of professionalism, ethics, and legalities. Includes use of terminology related to massage therapy; applications, indications, and contraindications of the nine strokes of Swedish massage; and study of the human osseous and muscular structure. Also includes emphasis on normal movement patterns, origins, insertions, and functions of the muscular system.

*Prerequisite(s):* With a grade of C or better or concurrent enrollment: TMA 101, 120, 210, WED 110 and 111.

**TMA 202IN Therapeutic Massage Practices II**

6 credit hours, 9 periods (3 lec., 6 lab)

Refined application of the nine strokes of Swedish massage and contraindications to avoid. Includes application of advanced principles and techniques of trigger point therapy, muscle energy technique, stretching, hydrotherapy protocols, hot and cold applications, reflexology, and corporate massage. Also includes study of the human osseous and muscular structure with emphasis on normal movement patterns and the origin, insertion, and function of the muscular system.

*Prerequisite(s):* TMA 201IN with a grade C or better.

*Corequisite(s):* TMA 202LC

*Information:* IN indicates an integrated course with lecture and lab taught simultaneously. Course is restricted to students enrolled in the program.

**TMA 202LC Therapeutic Massage Practice Clinical Lab I**

1 credit hour, 3 periods (3 lab)

Students practice and perfect the application of fundamental Swedish Massage techniques in a supervised, supportive learning environment in an onsite clinical setting. Course reinforces massage theory and practice learned in TMA 201IN.

*Corequisite(s):* TMA 202IN

**TMA 210 Fundamentals of Kinesiology**

3 credit hours, 4 periods (2 lec., 2 lab)

A survey of the biology of movement. Includes a review of the skeletal and muscular systems, planes of movement and terms of anatomical reference; structure and function of joints; and origins, insertions and actions of muscles of the trunk and limbs. Also includes demonstration and analysis of normal and abnormal movement.

*Prerequisite(s):* BIO 160IN with a grade of C or better.

**TMA 214 Pregnancy Massage**

1 credit hour, 1 periods (1 lec.)

Basic information and techniques for performing massage on pregnant clients. Includes information about body changes during pregnancy, benefits and cautions of pregnancy massage, and techniques for common discomforts during pregnancy. Also includes pre-session considerations, setting and supplies for pregnancy massage and suggestions for documentation.

*Information:* Must be a licensed massage therapist.

**TMA 215 Introduction to Pathology for Massage and Bodywork**

3 credit hours, 3 periods (3 lec.)

Introduces the student to basic disease processes and common pathologies associated with organ systems and provides an overview of pathology pertinent to massage therapy and bodywork. Includes cautions, contraindications and adaptive measures as applied to common pathologies of organ systems. Also includes the potential interactions between bodywork and medications.

*Prerequisite(s):* With a grade of C or better: BIO 160IN and TMA 101.

**TMA 222 Business Management for Massage and Bodywork**

2 credit hours, 2 periods (2 lec.)

Business management course designed specifically for massage therapy and bodywork practitioners. Includes business planning and development, financial management, marketing, and communications for these professional practices.

*Prerequisite(s):* With a grade of C or better, or concurrent enrollment: BIO 160IN, TMA 202IN, and 202LC.

*Recommendation:* Concurrent enrollment in TMA 290LC.

**TMA 225 Massage in Health Care Settings**

1.5 credit hours, 1.5 periods (1.5 lec.)

Introduction to concepts, conditions, and unique elements of performing therapeutic massage in health care settings. Includes overview of common hospital policies, professionalism in the medical field, communication with health care providers, and sanitation and hygiene. Also includes an overview of appropriate massage techniques to employ on patients with specific medical conditions and diseases, impact of medications on massage patients, appropriate massage modifications for effects of medications, medical terminology and abbreviations, and case studies.

*Information:* Elective course for Licensed Massage Therapists (equivalent to 19.5 Continuing Education Hours or 1.95 CEUs.)

**TMA 290LC Therapeutic Massage Clinical**

3 credit hours, 8 periods (8 lab)

Application and integration of fundamental and advanced massage techniques for various purposes and populations. Includes Swedish, Deep Tissue, Pain and Injury Management, Stretching, Range of Motion, Asian, Energy, and Hospital-Based massage therapies.

*Prerequisite(s):* With a grade of C or better: TMA 120, 202IN, 202LC, 210, 215, and 222. (Concurrent enrollment permitted in: TMA 215, 222.)

**TMA 291 Therapeutic Massage Internship**

1 credit hour, 5 periods (5 lab)

Advancement and refinement of the knowledge, practice skills and professional abilities necessary for success in a therapeutic massage setting. Includes observing, assisting and participating in various duties and massage practices in an off-site, clinical therapeutic massage setting as appropriate and specific to the internship site. Also includes observation and application of business and professional skills.

*Prerequisite(s):* With a grade of C or better, or concurrent enrollment: BIO 160IN, TMA 222, and 290LC.

*Information:* May be taken three times for a maximum of three credit hours. If this course is repeated see a financial aid or Veteran's Affairs advisor to determine funding eligibility as appropriate. *Information:* Students enrolling for the first time must take the course concurrently with TMA 290LC.

**TMA 296 Therapeutic Massage Independent Study**

1-3 credit hours, 2-6 periods (.5-1.5 lec., 1.5-4.5 lab)

Opportunity to continue development as a massage therapist through the pursuit of a specific project or area of study in therapeutic massage. Content will be determined by instructor and student.

*Information: Students must obtain faculty approval before enrolling in this course. Information: Course content and performance objectives will be kept on file. Information: May be taken three times for a maximum of three credit hours.*

## Translation and Interpretation

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**TRS 101 Introduction to Translation and Interpretation**

3 credit hours, 3 periods (3 lec.)

Principles and procedures for acquisition of skills in interpretation and translation of written materials. Includes an introduction to translation and interpretation; translation and interpretation preparation, procedures, and specialties; and work of the translator and interpreter.

**TRS 102 English and Spanish for Translation**

4 credit hours, 4 periods (4 lec.)

Analysis of the English and Spanish languages from the translator's point of view. Includes the structure of English and Spanish, cultural and stylistic components, and semantics. Also includes standard English mechanics, punctuation, and metaphorical and idiomatic expressions as well as an analysis of Spanish and the dialectal differences, interferences and lexical obstacles.

**TRS 120IN Technology for Translation and Interpretation**

2 credit hours, 3 periods (1 lec., 2 lab)

Survey of the technological equipment that facilitates the work of the translator. Includes computers for transcription/translation, information distribution techniques, file transfer technologies, using the World Wide Web in translation and interpretation, and applied projects.

*Information: CSA 100 may be waived if computer applications experience is documented. See an instructor. IN is the integrated version of the course with the lecture and lab taught simultaneously.*

**TRS 150 Survey of Translation Specialty Areas**

4 credit hours, 4 periods (4 lec.)

Introduction to the translation specialty areas of health care, legal, literary, and commercial/business. Includes introduction to specialty areas, types of documents, elements and characteristics of specialty documents, resource development, ethical and legal restrictions, and development of translation subskills.

**TRS 160 Translation in Specialty Areas**

4 credit hours, 4 periods (4 lec.)

Principles and procedures for translating specialty area materials. Includes health care, legal, commercial/business, and literary translation exercises.

**TRS 161 Medical Spanish and English Interpreting**

3 credit hours, 3 periods (3 lec.)

Interpreting in a medical context. Includes interpreting in a medical setting, pronunciation of Spanish and English names and medical terms, Spanish and English medical terminology, bicultural medical communication, and regional dialects.

*Information: This course assumes bilingual fluency in both English and Spanish.*

**TRS 162 Introduction to Legal Spanish/English Interpretation**

3 credit hours, 3 periods (3 lec.)

Interpreting in a legal context. Includes interpreting in a legal setting, knowledge of legal procedure and ancillary issues related to legal terminology in Spanish and English, bicultural legal communication, and regional differences.

*Information: Requires Spanish/English language fluency.*

**TRS 202 Interpretation Techniques**

3 credit hours, 3 periods (3 lec.)

Specific theories and practices in interpreting oral communication from English to Spanish and Spanish to English. Includes theories of interpretation, techniques of interpretation, interpretation strategies, interpretation procedures, and modes of interpretation.

*Prerequisite(s): TRS 101.*

**TRS 203 Consecutive Interpretation and Sight Translation**

4 credit hours, 6 periods (3 lec., 3 lab)

Essential modes of interpretation. Includes history and use, theory, interpreting skills development, sight translation skills, consecutive interpretation skills, and interpretation issues.

**TRS 270 Simultaneous Interpretation**

4 credit hours, 4 periods (4 lec.)

Study and practice of simultaneous interpretation. Includes history and use, theory, interpreting skills development, simultaneous interpretation skills, and issues in simultaneous interpretation.

**TRS 282 Advanced Project in Translation**

4 credit hours, 5 periods (3 lec., 2 lab)

Engaging in a specialty area advanced project to produce a translated product. Includes agency/individual sponsor, translation goals, translating written documents, on-site and/or supervised training, and preparation for exit competency evaluation.

## Travel and Tourism Operations

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**TVL 101 Introduction to the Travel Industry**

3 credit hours, 3 periods (3 lec.)

Major components of travel products and careers. Includes travel industry and hospitality products, distribution of the travel product, and careers in the travel industry.

**TVL 102 Computerized Reservation Systems**

3 credit hours, 5 periods (2 lec., 3 lab)

Basic software training. Includes screen management, passenger name record (PNR), Sabre's FOX, PNR modifications, faring/pricing the completed PNR, booking and pricing hotels and rental cars.

**TVL 103 Geography for the Tourism Professional**

3 credit hours, 3 periods (3 lec.)

Applied physical geography of popular global tourist destinations, major tourist attractions, popular history, and itineraries for specific destinations. Includes the opportunity to take the Travel Institute's Destination Specialist Certification Exam in the geographic area of choice.

**TVL 109 Survey of Leisure Products**

3 credit hours, 3 periods (3 lec.)

Electronically research, sell, and book retail leisure travel components to include, but not limited to hotels, rental cars, rail travel, escorted and all-inclusive tours, and cruise accommodations. Includes an introduction to web-based marketing (blogs, Facebook, Instagram, and other web-based conduits for increasing sales) for tourism consultants who sell a variety of tourism products.

**TVL 121 Tourism Sales and Marketing**

3 credit hours, 3 periods (3 lec.)

Concepts of selling techniques for the tourism professional. Includes phone and internet selling strategies as well as an introduction to listening skills, sales techniques, client behavior styles, closing the sale, legal aspects of the travel industry for inside, outside and home-base tourism professionals. Also includes concepts of tourism marketing and marketing techniques for the tourism professional, consumer behavior, strategies, and marketing elements.

**TVL 211 Tour Direction and Tour Group Management**

3 credit hours, 3 periods (3 lec.)

Introduction to the basic principles of guiding tours. Includes principles of tour group handling, tour group planning, tour guide basics, tour guide narration, tour guide procedures and challenges, and public speaking for the tour guide.

**TVL 296 Independent Study in Travel/Tourism**

1-3 credit hours, 1-3 periods (1-3 lec.)

Independent studies projects or special interest areas in travel/tourism. Content to be determined jointly between student and instructor.

*Information: May be taken three times for a maximum of nine credit hours.*

## Truck Driver Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### TDT 116 Basic Vehicle Operations-Coach/Transit Bus

3 credit hours, 3 periods (3 lec.)

Information to prepare the trainees to pass the Commercial Driver License (CDL) exam and obtain a Class "B" permit with a "P" passenger endorsement. Includes CDL preparation, driving conditions, pre-trip inspection, air brakes, map reading, hours of service, backing, and transporting passengers.

*Information: Admission to the Truck Driver Training Program is required prior to registration.*

### TDT 117 Basic Driving Maneuvers - Coach/Transit Bus

3 credit hours, 3.5 periods (2.5 lec., 1 lab)

Techniques for the inspection and safe operation of a coach or transit bus. Includes pre-trip inspection, backing, basic control of left and right turns, progressive shifting, space and speed management, visual search and communication, defensive driving, and hazard perception.

*Information: Admission to the Truck Driver Training Program is required prior to registration.*

### TDT 118 Basic Vehicle Operations and Commercial Driver's License Req

5 credit hours, 5 periods (5 lec.)

Basic methods of safely operating a combination vehicle. Includes the operation of the air brake system, coupling and uncoupling a tractor and trailer, cargo handling including hazardous materials, proper method of conducting a pre-trip inspection, completion of braking maneuvers, and trip planning. Also includes familiarization of the United States Department of Transportation (USDOT) regulations, hours of driver service, and all Commercial Driver's License (CDL) requirements, managing a professional driver life, managing speed effectively, and road and weather condition response.

*Information: Admission to the Truck Driver Training Program is required prior to registration.*

### TDT 119 Basic Driving Maneuvers-Class A CDL

3.5 credit hours, 4 periods (3 lec., 1 lab)

Demonstration and skill development of basic maneuvers of driving a combination vehicle. Driving proficiency development including control, backing, visual search, shifting, turning, space and speed management, and hazard perception. Successful completion of this class should prepare trainee for Commercial Driver's License (CDL) skill examination.

*Prerequisite(s): Completion of TDT 118 with a grade of C or better.*

*Information: Admission to the Truck Driver Training Program is required prior to registration. A valid Commercial Driver's License (CDL) permit will meet the prerequisite for TDT 118.*

### TDT 120 Truck Driver Training Refresher

3.5 credit hours, 4 periods (3 lec., 1 lab)

Overview of Truck Driver skill requirements. Includes all range and road skills with instruction in control, backing, visual search, shifting, turning, space and speed management, and hazard perception.

*Information: Valid Commercial Driver's License and Department of Transportation physical and drug screen are required before enrolling in this course.*

## Veterinary Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### VET 100 Introduction to Veterinary Technology

3 credit hours, 3 periods (3 lec.)

Introduction into the role of the veterinary technician careers and career paths, legal applications, ethical responsibilities, professional attitudes, medical terminology, and occupational safety issues. Also includes breed identification of domestic animals, behavioral characteristics of animals, human-animal bonding, and dealing with pet loss.

*Corequisite(s): VET 110, VET 130, VET 225*

*Information: Admission to the Veterinary Technology program is required before enrolling in this course.*

### VET 106 Veterinary Practice Assistant I

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to the basic skills needed to assist veterinary professionals in the quality care of animals. Includes animal restraint, nursing, vaccinations and other basic assisting skills.

*Corequisite(s): VET 107, VET 108*

*Information: Consent of program faculty is required before enrolling in this course.*



**VET 107 Veterinary Practice Assistant II**

3 credit hours, 4 periods (2 lec., 2 lab)

Build on the foundation skills of veterinary clinical care in VET 106. Includes foundations in pharmacy order fulfillment, supportive roles in surgical environment, care of surgical equipment, and the assistants role in obtaining samples and submitting them for diagnostic results. Also includes an introduction to veterinary imaging and restraint techniques needed related to imaging.

*Corequisite(s):* VET 106, VET 108

*Information:* In order to continue in VET 107, students must complete VET 106 with a grade of C or higher.

**VET 108 Introduction to Veterinary Facility Practices**

6 credit hours, 6 periods (6 lec.)

Introduction into the role of the veterinary practice assistant in the veterinary medicine profession. Includes careers and career paths, legal applications, ethical responsibilities, professional attitudes, medical terminology, and occupational safety issues. Also includes standard office procedures with an emphasis in client relations and education and computer skills, breed identification of domestic animals, behavioral characteristics of animals, human-animal bonding, and dealing with pet loss.

*Corequisite(s):* VET 106, VET 107

**VET 110 Veterinary Nursing Procedures I**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to veterinary nursing techniques. Includes physical examination, history taking, injections, preventative health care, basic nutrition and animal restraint. Also includes husbandry techniques, kennel management and sanitation of kennel facilities for dogs and cats.

*Corequisite(s):* VET 100, VET 130, VET 225

*Information:* Admission to the Veterinary Technology program is required before enrolling in this course.

**VET 111 Veterinary Nursing Procedures II**

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of VET 110 with an emphasis on venipuncture, catheterization, fluid therapy and basic dental care procedures. Includes complete physical examinations, wound management, CPR and first aid.

*Prerequisite(s):* VET 100, 110, 130 and 225.

*Corequisite(s):* VET 120, VET 131, VET 150

**VET 120 Clinical Pathology I**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to clinical pathology. Includes pathology terminology, basic laboratory procedures and specimen collection and preservation. Also includes basic use and care of microscopes.

*Prerequisite(s):* VET 100, 110, 130 and 225.

*Corequisite(s):* VET 111, VET 131, VET 150

**VET 121 Clinical Pathology II**

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of VET 120. Includes review of laboratory procedures, urinalysis, and cytologic evaluations. Also includes pathogens, parasites, and hematologic evaluations.

*Prerequisite(s):* VET 111, 120, 131 and 150.

*Corequisite(s):* VET 200, VET 211

**VET 130 Animal Anatomy and Physiology I**

4 credit hours, 6 periods (3 lec., 3 lab)

Anatomy and physiology of domestic animals. Includes the study of body systems such as skeletal, muscular, integumentary, special sense organs, circulatory and digestive. Also includes principles of disease.

*Prerequisite(s):* Within the last eight years with a C or better: BIO 156IN or BIO 181IN (or required score on BIO 156 assessment test), and CHM 130IN or CHM 151IN (or score of 34 or higher on the CHM 130 assessment test.)

*Corequisite(s):* VET 100, VET 110, VET 225

*Information:* Admission to Veterinary Technology program is required before enrolling in this course.

**VET 131 Animal Anatomy and Physiology II**

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of VET 130. Includes the study of the nervous, respiratory, and reproductive systems and special sense organs. Also includes endocrine, urinary systems, and principles of disease.

*Prerequisite(s):* VET 100, 110, 130 and 225.

*Corequisite(s):* VET 111, VET 120, VET 150

**VET 150 Pharmacology**

3 credit hours, 4 periods (2 lec., 2 lab)

Introduction to regulations of biologics and pharmaceuticals. Includes classification, dosage calculations, labeling, logging and packaging of drugs.

*Prerequisite(s):* VET 100, 110, 130 and 225.

*Corequisite(s):* VET 111, VET 120, VET 131

**VET 191 Veterinary Technician Clinical Experience I**

3 credit hours, 12 periods (12 lab)

Supervised 200 hour clinical experience, which will be conducted at local veterinary hospitals, clinics, laboratory, and zoo or research facilities.

*Information:* Completion of first year Veterinary Technology courses is required before enrolling in this course.

**VET 196 Independent Study in Veterinary Technology**

1-3 credit hours, 1-3 periods (1-3 lec.)

Independent study course offering students an inroad to focus on a particular veterinary medical subject or subjects, to study that subject, and to hone manual skills while working in an independent format. Content of study and its manner of execution must be developed through mutual agreement between the student and the instructor prior to enrollment in the course.

*Information:* Consent of instructor is required before enrolling in this class.

**VET 200 Anesthetic and Surgical Nursing**

2 credit hours, 2 periods (2 lec.)

Explore scientific principles on which asepsis, sterilization, staff and patient safety, and nursing techniques are practiced in the anesthetic and surgical environment. Includes pharmacology and physiology associated with anesthesia. Also includes content knowledge behind the application in the laboratory setting and in the field, which lead to favorable clinical outcomes.

*Prerequisite(s):* VET 111, 120, 131, and 150.

*Corequisite(s):* VET 121, VET 200LB, VET 211

**VET 200LB Anesthetic and Surgical Nursing Laboratory**

1 credit hour, 3 periods (3 lab)

This is the lab portion of VET 200. Foundation of techniques and procedures involving surgery and anesthesia. Includes preparation, maintenance care, sterilization and identification of instruments and surgical equipment. Also includes active participation in routine surgical procedures as an operating nurse (e.g. anesthesia induction, anesthetic maintenance, anesthetic monitoring, post-surgical patient care, surgical suite maintenance, and surgical and medical record keeping.)

*Prerequisite(s):* VET 111, 120, 131, and 150.

*Corequisite(s):* VET 121, VET 200, VET 211

**VET 205 Radiology and Imaging Techniques**

2 credit hours, 2 periods (2 lec.)

Principles and techniques of radiographic imaging. Includes the physics behind production of X-rays, ultrasound and advanced imaging. Introduction to radiographic equipment, endoscopy equipment, ultrasound equipment and 3 dimensional imaging units. Instruction in workplace safety measures regarding imaging equipment.

*Prerequisite(s):* VET 130 and 131.

*Corequisite(s):* VET 205LB

**VET 205LB Radiology and Imaging Techniques Lab**

1 credit hour, 2 periods (2 lab)

The lab portion of VET 205. Includes principles and techniques of radiographic imaging. Also includes the production of X-rays, radiographic equipment, safety measures and radiographic quality, diagnostic radiographs, positioning of patients, darkroom techniques and X-ray processing.

*Prerequisite(s):* VET 130 and 131.

*Corequisite(s):* VET 205

**VET 210 Veterinary Nursing Procedures: Large Animal Care**

2 credit hours, 5 periods (1 lec., 4 lab)

Veterinary nursing techniques for large animals. Includes restraint procedures; nursing care and behavior of large animals; preventative medicine; nutrition; and large animal medical and surgical procedures. Also includes mentoring techniques; teamwork; communications; and health problem assessment involving kennel management.

*Prerequisite(s):* VET 111, 120, 131 and 150.

*Corequisite(s):* VET 205, VET 220

**VET 211 Veterinary Nursing Procedures:Avian, Exotic, and Lab Animals**

2 credit hours, 5 periods (1 lec., 4 lab)

Veterinary nursing techniques for avian, exotic and laboratory animals. Includes care and management of laboratory animals and exotic companion animals; nursing procedures; preventative health care; and restraint. Also includes mentoring techniques; teamwork; communications; and health problem assessment involving kennel management.

*Prerequisite(s):* VET 111, 120, 131, 150.

*Corequisite(s):* VET 121, VET 200

**VET 220 Clinical Pathology III**

3 credit hours, 4 periods (2 lec., 2 lab)

Continuation of VET 121 for summation of laboratory skills and techniques needed of the Veterinary Technician. Includes blood chemistry, bacteriologic and microbiologic procedures and necropsy.

*Prerequisite(s):* VET 121, 200 and 211.

*Corequisite(s):* VET 205, VET 210

**VET 225 Veterinary Hospital Procedures**

3 credit hours, 3 periods (3 lec.)

Standard office procedures with an emphasis in client relations, education and computer skills. Ethics in veterinary medicine, state and federal regulations governing veterinarian practices and all aspects of clinical patient care will be covered.

*Corequisite(s):* VET 100, VET 110, VET 130

*Information:* Admission to the Veterinary Technology program is required before enrolling in this course.

**VET 230 VTNE and AZ State Veterinary Medical Examining Board Review**

3 credit hours, 3 periods (3 lec.)

Test preparation for VTNE (Veterinary Technician National Examination) and state medical examination board. Includes a review of the Arizona Revised Statutes and Administrative Rules pertaining to veterinary medicine and content review of all pertinent medical subjects. Also includes test taking skills, test anxiety reduction techniques, and practice for board exams.

**VET 291 Veterinary Technician Clinical Experience II**

3 credit hours, 12 periods (12 lab)

Supervised 200 hour clinical experience, which will be conducted at local veterinary hospitals, clinics, laboratory, and zoo or research facilities.

*Information:* Completion of all VET Courses is required before enrolling in this course.

## Welding

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

**WLD 110 Basic Arc and Oxyacetylene Welding**

4 credit hours, 6 periods (2 lec., 4 lab)

Procedures and techniques in arc and oxyacetylene welding. Includes health, safety, and environmental practices, welding terminology, arc and oxyacetylene welding equipment, proper welding procedures for arc and oxyacetylene, arc and oxyacetylene steel welding, welding machines and polarities, filler metal identification, and welding positions, and oxyacetylene cutting.

**WLD 115 Blueprint Reading/Estimating**

4 credit hours, 4 periods (4 lec.)

Principles and procedures for interpreting structural blueprints and determining materials and labor costs. Includes fundamentals of blueprint reading, welding print format and types of fabrication blueprints, welding symbols and sizes, structural shapes and symbols, blueprint interpretation, introduction to estimating, bonds and insurance, materials specifications, labor, structural steel systems, and steel fabrication checklist.

*Prerequisite(s):* Within the last three years: MAT 082 with a C or better or MAT 089A through Module 10 or required score on the Mathematics assessment test.

**WLD 120 Welding for Metal Sculpture**

4 credit hours, 6 periods (2 lec., 4 lab)

Basic welding techniques and processes used in metal sculpture design and fabrication. Includes oxyacetylene safety practice, oxyacetylene equipment handling, oxyacetylene welding procedures, assembly of portable equipment, oxyacetylene cutting and design, oxyacetylene bronze build-up, arc welding safety practices, arc welding procedures, basic joint design, currents and polarities, arc welding machines and electrodes, and arc designing for sculpture.

**WLD 160 Arc Welding**

4 credit hours, 6 periods (2 lec., 4 lab)

Principles and techniques of joining metals with an electric arc as the source. Includes arc welding uses, safety, techniques, flame cutting, joint design, welding costs, electric currents and power sources, carbon arc cutting, filler metal selection, hardfacing, and metal identification.

*Prerequisite(s):* WLD 110.

*Information:* Prerequisite may be waived with appropriate work experience or course work. See a welding instructor or advisor for prerequisite information.

**WLD 250 Pipe Welding**

4 credit hours, 6 periods (2 lec., 4 lab)

Principles and techniques of pipe welding. Includes introduction to pipe layout and drawing equipment. Also includes an introduction to performance testing, types of pipe, methods and preparation of pipe joints and miter joints, methods of joining pipe and miter joints.

*Prerequisite(s):* WLD 160.

*Information:* Prerequisite(s) may be waived with appropriate work experience. See a welding instructor or advisor for prerequisite information.

**WLD 261 Gas Metal Arc Welding**

4 credit hours, 6 periods (2 lec., 4 lab)

Procedures and techniques in Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) processes. Includes health, safety, and environmental practices, welding terminology, GMAW and FCAW processes and equipment, equipment operation and welding techniques, power source and wire feed types and controls, welding currents and polarities, welding wires in GMAW and FCAW processes, shielding gases, and mild steel and aluminum welding.

**WLD 262 Gas Tungsten Arc Welding**

4 credit hours, 6 periods (2 lec., 4 lab)

Procedures and techniques in the Gas Tungsten Arc Welding (GTAW) process. Includes health, safety, and environmental practices, welding terminology, GTAW process and equipment, equipment operation and techniques, power source types and controls, welding currents and polarities, tungsten electrodes, shielding gases, mild steel welding, aluminum welding, stainless steel welding, and GTAW certification.

*Prerequisite(s):* WLD 110.

*Information:* Prerequisite may be waived with welding industry experience.

**WLD 263 Layout and Fabrication Welding**

4 credit hours, 6 periods (2 lec., 4 lab)

Principles and techniques of steel layout and fabrication welding. Includes measurement, print reading review, layout tools, layout techniques, hand-held power tool safety and use, large power tool safety and use, drawing interpretation, structural methods, and welding projects.

*Prerequisite(s):* WLD 115, 261 and GTM 105 (or placement into MAT 092 or higher).

*Recommendation:* Completion of WLD 160 before enrolling in this course.

*Information:* Prerequisites may be waived for appropriate work experience. See a welding instructor or advisor for prerequisite information.

**WLD 296 Welding Independent Projects**

1-4 credit hours, 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes project objectives, procedures, safety practices, welding processes, set-up for the project, and project completion.

*Prerequisite(s):* WLD 110.

*Information:* Welding industry experience or welding skills may be substituted for the prerequisite requirement. See a welding instructor for approval. May be repeated up to three times for a maximum of sixteen credit hours.

## Wellness Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### WED 110 Introduction to Complementary & Alternative Medicine

3 credit hours, 3 periods (3 lec.)

Definition of health; exploration of mind-body-spirit connection in health; various therapeutic modalities; identification of strengths and limitations of alternative therapies. Also includes development of ability to critically review written material in the alternative therapy area.

### WED 111 Self Care for Personal Wellness

2 credit hours, 2 periods (2 lec.)

Emphasis on mind-body methods for personal wellness through integration of physical, emotional, social, and spiritual dimensions of being. Development of a personal practice to achieve and sustain a balanced program to support personal health and well being.

### WED 120 Introduction to Energy Healing

1 credit hour, 1 periods (1 lec.)

An overview of energy modalities, how energy works, how energy can be manifested and used for healing, and the personal responsibilities and ethical considerations for a practitioner of healing.

*Information:* Elective course for Therapeutic Massage Program. Open to anyone who wishes to enroll. Recommended to health and wellness professionals for Continuing Education hours.

### WED 121 Reiki I

1 credit hour, 1 periods (1 lec.)

Instruction and certification in the Usui Method of Reiki Level I. Includes concepts, definitions, history, ethics, levels of Reiki, assessing energy, and hand positions used in Reiki. Also includes Reiki I attunement, and Reiki I sharing.

*Information:* Elective course for Therapeutic Massage Program. Open to anyone who wishes to enroll. Recommended to health and wellness professionals for Continuing Education hours.

### WED 122 Reiki II

1 credit hour, 1 periods (1 lec.)

Review of the Usui Method of Reiki Level I, and instruction and coaching in the concepts and techniques for Usui Method of Reiki Level II: distance healing and healing symbols in Reiki practice. Includes Reiki II attunement and certification.

*Prerequisite(s):* WED 121

*Information:* WED 121 may be waived with a Reiki I certificate from a qualified Reiki Master. See instructor for details. Applicable as an elective course for the Therapeutic Massage program and as continuing education hours for health and wellness professionals.

### WED 124 Craniosacral Therapy for Massage Therapists/Health Prof.

2 credit hours, 2 periods (2 lec.)

Instruction and certification in Craniosacral Therapy: a gentle, non-invasive bodywork technique. Includes history, concepts, effects, hand placements, sensations, and practice of a Craniosacral session.

*Information:* Elective course for Therapeutic Massage students. Open to anyone who wishes to enroll. Recommended for health and wellness professionals (equivalent to 26 Continuing Education Hours or 2.6 CEUs.)

## Writing

For courses numbered 098, 198, 298, see "Topic Courses" on page 278

### WRT 070 Developmental Writing

3 credit hours, 3 periods (3 lec.)

Development of fundamental writing skills. Includes writing processes and sentence development and structure.

*Prerequisite(s):* Required score on the Writing assessment.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070. Equivalent to WRT 075.

### WRT 070A Developmental Writing: Module A

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills. Includes writing processes and sentence development and structure.

*Prerequisite(s):* Required score on Writing assessment.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070. A student may concurrently enroll in WRT 070A, 070B, and 070C. Equivalent to WRT 075A.

**WRT 070AL Developmental English Composition with Individualized Instruction**

4 credit hours, 4.5 periods (3.5 lec., 1 lab)

Development of fundamental writing skills. Includes writing processes, sentence development, and structure. Also includes individualized instruction to increase academic and college readiness.

*Prerequisite(s):* Required score on writing assessment.

*Information:* Equivalent to WRT 070. This course incorporates a component of comprehensive skill development in an effort to increase college readiness. This course is appropriate for students needing additional support.

**WRT 070B Developmental English Composition: Module B**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills. Includes intermediate sentence development, structure and written works.

*Prerequisite(s):* With a C or better: WRT 070A or concurrent enrollment.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070. A student may concurrently enroll in WRT 070A, 070B, and 070C. Equivalent to WRT 075B.

**WRT 070C Developmental English Composition: Module C**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills. Includes advanced sentence development, structure and written works.

*Prerequisite(s):* With a C or better: WRT 070B or concurrent enrollment.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070. A student may concurrently enroll in WRT 070A, 070B, and 070C. Equivalent to WRT 075C.

**WRT 072 Sentence Patterns**

1 credit hour, 1 periods (1 lec.)

Review of various types of sentence structures. Includes variety of sentences, common grammar and sentence errors, punctuation, and short papers.

**WRT 073 Punctuation**

1 credit hour, 1 periods (1 lec.)

Review of punctuation mechanics. Includes rules of punctuation, punctuation mark usage, and written assignments.

**WRT 075 Developmental English Composition for Non-Native Speakers of English**

3 credit hours, 3 periods (3 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes writing processes, sentence development and structure, and written works.

*Prerequisite(s):* Required score on the Writing assessment.

*Information:* WRT 075A, 075B, and 075C together constitute WRT 075. Equivalent to WRT 070.

**WRT 075A Developmental English Composition for Non-Native Speakers of English: Module A**

1 credit hour, 1 periods (1 lec.)

English: Module A Development of fundamental writing skills for non-native speakers of English. Includes writing processes, beginning sentence development and structure, and written works.

*Prerequisite(s):* Required score on the Writing assessment.

*Information:* WRT 075A, 075B, and 075C together constitute WRT 075. A student may concurrently enroll in WRT 075A, 075B, and 075C. Equivalent to WRT 070A.

**WRT 075B Developmental English Composition for Non-Native Speakers of English: Module B**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes intermediate sentence development and structure and written works.

*Prerequisite(s):* With a C or better: WRT 075A or concurrent enrollment.

*Information:* WRT 075A, 075B, and 075C together constitute WRT 075. A student may concurrently enroll in WRT 075A, 075B, and 075C. Equivalent to WRT 070B.

**WRT 075C Developmental English Composition for Non-Native Speakers of English: Module C**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes advanced sentence development and structure and written works.

*Prerequisite(s):* With a C or better: WRT 075B or concurrent enrollment.

*Information:* WRT 075A, 075B, and 075C together constitute WRT 075. A student may concurrently enroll in WRT 075A, 075B, and 075C. Equivalent to WRT 070C.



**WRT 090 English Composition Fundamentals**

3 credit hours, 3 periods (3 lec.)

Introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* With a C or better: WRT 070, or 075, or ESL 088WG; or ICS 079 with a B or better, or required score on the Writing assessment.

*Information:* WRT 090A, 090B, and 090C together constitute WRT 090. Equivalent to WRT 096.

**WRT 090A English Composition Fundamentals: Module A**

1 credit hour, 1 periods (1 lec.)

Introduction to academic writing. Includes basic, beginning practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* With a C or better: WRT 070 or 075 or ESL 088WG or ICS 079 with a B or better, or required score on the Writing assessment.

*Information:* WRT 090A, 090B, and 090C together constitute WRT 090. A student may concurrently enroll in WRT 090A, 090B, and 090C. Equivalent to WRT 096A.

**WRT 090B English Composition Fundamentals: Module B**

1 credit hour, 1 periods (1 lec.)

Introduction to academic writing. Includes basic intermediate practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing short essays.

*Prerequisite(s):* With a C or better: WRT 090A or concurrent enrollment.

*Information:* WRT 090A, 090B, and 090C together constitute WRT 090. A student may concurrently enroll in WRT 090A, 090B, and 090C. Equivalent to WRT 096B.

**WRT 090C English Composition Fundamentals: Module C**

1 credit hour, 1 periods (1 lec.)

Introduction to academic writing. Includes basic advanced practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing short essays.

*Prerequisite(s):* With a C or better: WRT 090B or concurrent enrollment.

*Information:* WRT 090A, 090B, and 090C together constitute WRT 090. A student may concurrently enroll in WRT 090A, 090B, and 090C. Equivalent to WRT 096C.

**WRT 090P English Composition Fundamentals Plus**

4 credit hours, 4 periods (4 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* ICS 079 with a C or better or placement into WRT 070 on the Writing assessment.

*Information:* WRT 090PA, 090PB, 090PC, and 090PD together constitute WRT 090P. Equivalent to WRT 096P.

**WRT 090PA English Composition Fundamentals Plus: Module A**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs.

*Prerequisite(s):* ICS 079 with a C or better or placement into WRT 070 on the Writing assessment.

*Information:* WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PA.

**WRT 090PB Writing Fundamentals Plus: Module B**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs.

*Prerequisite(s):* WRT 090PA or concurrent enrollment.

*Information:* WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PB.

**WRT 090PC English Composition Fundamentals Plus: Module C**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* WRT 090PB or concurrent enrollment.

*Information:* WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PC.

**WRT 090PD English Composition Fundamentals Plus: Module D**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* WRT 090PC or concurrent enrollment.

*Information:* WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PD.

**WRT 090R Integrated English Composition and Reading Fundamentals**

6 credit hours, 6 periods (6 lec.)

Integrated writing and reading skills. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing texts using appropriate technology, and analyzing and creating paragraphs and short essays. Also includes vocabulary, comprehension, study strategies, metacognition, information literacy, and a community of readers.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. Reading: With a C or better: ESL 088RV, or REA 081, or required score on the Reading assessment. Writing: With a C or better: WRT 070, or 0075, or ESL 088WG, or ICS 079 with a B or better, or required score on the Writing assessment.

*Information:* This course fulfills REA 091 and WRT 090.

**WRT 090S English Composition Fundamentals / Intergrated Studio**

4 credit hours, 4.5 periods (3.5 lec., 1 lab)

Introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays. Integrates an intensive studio component that includes specific strategies designed to improve student performance and success.

*Prerequisite(s):* ICS 079 with a C or better or placement into WRT 070 on the writing assessment.

*Information:* Equivalent to WRT 090. For students who assess into WRT 070 but believe that with additional studio instruction they can successfully complete WRT 090.

**WRT 096 English Composition Fundamentals for Non-Native Speakers of English**

3 credit hours, 3 periods (3 lec.)

Introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* With a C or better: WRT 070, or 075, or ESL 088WG; or ICS 079 with a B or better, or required score on the Writing assessment.

*Information:* WRT 096A, 096B, and 096C together constitute WRT 096. Equivalent to WRT 090.

**WRT 096A Writing Fundamentals for Non-Native Speakers of English: Module A**

1 credit hour, 1 periods (1 lec.)

Introduction to academic writing. Includes basic, beginning practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* With a grade of C or better: ESL 088WG or WRT 070 or 075, or required score on the Writing assessment.

*Information:* WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT 096A, 096B, and 096C. Equivalent to WRT 090A.

**WRT 096B English Composition Fundamentals for Non-Native Speakers of English: Module B**

1 credit hour, 1 periods (1 lec.)

Introduction to academic writing. Includes basic intermediate practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing short essays.

*Prerequisite(s):* With a C or better: WRT 096A or concurrent enrollment.

*Information:* WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT096A, 096B, and 096C. Equivalent to WRT 090B.

**WRT 096C English Composition for Non-Native Speakers of Eng English: Module C**

1 credit hour, 1 periods (1 lec.)

Introduction to academic writing. Includes basic advanced practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing short essays.

*Prerequisite(s):* With a C or better: WRT 096 B or concurrent enrollment.

*Information:* WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT 096A, 096B, and 096C. Equivalent to WRT 090C.

**WRT 096P English Composition Fundamentals for Non-Native Speakers of English**

4 credit hours, 4 periods (4 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* ICS 079 with a B or better or placement into WRT 070 on the Writing assessment.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090P.

**WRT 096PA English Composition Fundamentals for Non-Native Speakers of English: Module A**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs.

*Prerequisite(s):* ICS 079 with a B or better or placement into WRT 070 on the Writing assessment.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PA.

**WRT 096PB English Composition Fundamentals for Non-Native Speakers of English: Module B**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs.

*Prerequisite(s):* WRT096PA with a C or better or concurrent enrollment.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PB.

**WRT 096PC English Composition Fundamentals for Non-Native Speakers of English: Module C**

1 credit hour, 1 periods (1 lab)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

*Prerequisite(s):* WRT 096PB with a C or better or concurrent enrollment.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PC.

**WRT 096PD English Composition Fundamentals for Non-Native Speakers of English: Module D**

1 credit hour, 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing analyzing and writing paragraphs and short essays.

*Prerequisite(s):* WRT 096PC with a C or better or concurrent enrollment.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PD.

**WRT 101 English Composition I**

3 credit hours, 3 periods (3 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. With a C or better in REA 091 or concurrent enrollment, or placement into REA 112 AND with a C or better in WRT 090 or 090P or 090S or 096 or ESL 088WG, or placement into WRT 101. Or with a C or better in WRT 090R (meets both Reading and Writing prerequisites).

**WRT 101A English Composition I: Module A**

1 credit hour, 1 periods (1 lec.)

Principles and practices of college-level writing. Includes practicing multiple writing processes, using conventions in creating and revising texts, and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. With a C or better in REA 091 or concurrent enrollment, or placement into REA 112 AND with a C or better in WRT 090 or 090P or 090S or 096 or ESL 088WG, or placement into WRT 101. Or with a C or better in WRT 090R (meets both Reading and Writing prerequisites).

*Information:* WRT 101A, 101B, and 101C together constitute WRT 101. A student may concurrently enroll in WRT 101A, 101B, and 101C. Equivalent to WRT 107A.

**WRT 101B English Composition I: Module B**

1 credit hour, 1 periods (1 lec.)

Principles and practices of college-level writing. Includes employing critical thinking skills, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* With a C or better: WRT 101A or concurrent enrollment.

*Information:* WRT 101A, 101B, and 101C together constitute WRT 101. A student may concurrently enroll in WRT 101A, 101B, and 101C. Equivalent to WRT 107B.

**WRT 101C English Composition I: Module C**

1 credit hour, 1 periods (1 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* With a C or better: WRT 101B or concurrent enrollment.

*Information:* WRT 101A, 101B, and 101C together constitute WRT 101. A student may concurrently enroll in WRT 101A, 101B, and 101C. Equivalent to WRT 107C.

**WRT 101HC English Composition I: Honors**

3 credit hours, 3 periods (3 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation. Also includes additional Honors content.

*Prerequisite(s):* Honors-level score on the Reading and Writing assessment test.

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors Content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**WRT 101S English Composition I / Integrated Studio**

4 credit hours, 4.5 periods (3.5 lec., 1 lab)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, using appropriate technology, and writing college-level essays with an emphasis on argumentation. Integrates an intensive studio component that includes specific strategies designed to improve student performance and success.

*Prerequisite(s):* With a C or better: WRT 090P or 090S; or ESL 088WG with a B or better, or placement into WRT 090 on the Writing assessment.

*Information:* Equivalent to WRT101. For students who assess into WRT 090 but believe that with additional studio instruction they can successfully complete WRT101.

**WRT 102 English Composition II**

3 credit hours, 3 periods (3 lec.)

Continuation of WRT 101. Includes reading, analyzing, and discussing various types of text; writing analytical or critical papers; and developing research skills. Also includes writing a research paper.

*Prerequisite(s):* With a C or better: WRT 101, 101S, or 107.

**WRT 102A English Composition II: Module A**

1 credit hour, 1 periods (1 lec.)

Continuation of WRT 101. Includes beginning practice in reading, analyzing, and discussing various types of text and beginning practice in writing analytical or critical papers.

*Prerequisite(s):* With a C or better: WRT 101, 101S, or 107.

*Information:* WRT 102A, 102B and 102C together constitute WRT 102. A student may concurrently enroll in WRT 102A, 102B and 102C. Equivalent to WRT 108A.

**WRT 102B English Composition II: Module B**

1 credit hour, 1 periods (1 lec.)

Continuation of WRT 101. Includes intermediate practice in reading, analyzing, and discussion various types of text; intermediate practice in writing analytical or critical papers; and developing basic research skills. Also includes writing a research paper.

*Prerequisite(s):* WRT 102A with a C or better or concurrent enrollment.

*Information:* WRT 102A, 102B and 102C together constitute WRT 102. A student may concurrently enroll in WRT 102A, 102B, and 102C. Equivalent to WRT 108B.

**WRT 102C English Composition II: Module C**

1 credit hour, 1 periods (1 lec.)

Continuation of WRT 101. Includes advanced practice in reading, analyzing, and discussing various types of text and advanced practice in writing analytical or critical papers.

*Prerequisite(s):* WRT 102B with a C or better or concurrent enrollment.

*Information:* WRT 102A, 102B and 102C together constitute WRT 102. A student may concurrently enroll in WRT 102A, 102B and 102C. *Information:* Equivalent to WRT 108C.

**WRT 102HC English Composition II: Honors**

3 credit hours, 3 periods (3 lec.)

Continuation of WRT 101 or WRT 101HC. Includes reading, analyzing, and discussing various types of text; writing analytical or critical papers; and developing research skills. Also includes writing a research paper and additional Honors content.

*Prerequisite(s):* With a B or better: WRT 101, 101HC, 101S, or 107.

*Information:* Must qualify for Honors program. Instructor or advisor/counselor approval may be required before registering for this course. Honors content may include: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources. Also may include a high-quality, peer reviewed paper or project in a format appropriate for the discipline with research presented in class or to a wider audience.

**WRT 107 English Composition I for Non-Native Speakers of English**

3 credit hours, 3 periods (3 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. Reading: With a C or better REA 091 or concurrent enrollment, or placement into REA 112. Writing: With a C or better WRT 090 or 090P or 090S or 096 or ESL 088 WG, or placement into WRT 101. Or WRT 090R with a C or better (meets both Reading and Writing prerequisites).

*Information:* WRT 107A, 107B, and 107C together constitute WRT 107. Equivalent to WRT 101.

**WRT 107A English Composition I for Non-Native Speakers of English: Module A**

1 credit hour, 1 periods (1 lec.)

Principles and practices of college-level writing. Includes practicing multiple writing processes, using conventions in creating and revising texts, and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* Requires both Reading and Writing prerequisites. With a C or better in REA 091 or concurrent enrollment, or placement into REA 112 AND with a C or better in WRT 090 or 090P or 090S or 096 or ESL 088WG, or placement into WRT 101. Or with a C or better in WRT 090R (meets both Reading and Writing prerequisites).

*Information:* WRT 107A, 107B, and 107C together constitute WRT 107. A student may concurrently enroll in WRT 107A, 107B, and 107C. Equivalent to WRT 101A.



**WRT 107B English Composition I for Non-Native Speakers of English: Module B**

1 credit hour, 1 periods (1 lec.)

Principles and practices of college-level writing. Includes employing critical thinking skills, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* WRT 107A with a C or better or concurrent enrollment.

*Information:* WRT 107A, 107B, and 107C together constitute WRT 107. A student may concurrently enroll in WRT 107A, 107B, and 107C. Equivalent to WRT 101B.

**WRT 107C English Composition I for Non-Native Speakers of English: Module C**

1 credit hour, 1 periods (1 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts and writing college-level essays with an emphasis on argumentation.

*Prerequisite(s):* WRT 107B with a C or better or concurrent enrollment.

*Information:* WRT 107A, 107B, and 107C together constitute WRT 107. A student may concurrently enroll in WRT 107A, 107B, and 107C. Equivalent to WRT 101C.

**WRT 108 English Composition II for Non-Native Speakers of English**

3 credit hours, 3 periods (3 lec.)

Continuation of WRT 107 appropriate for non-native speakers of English. Includes reading, analyzing, and discussing various types of text; writing analytical or critical papers; and developing research skills. Also includes writing a research paper.

*Prerequisite(s):* With a C or better: WRT 101, 101S or 107.

*Information:* Equivalent to WRT 102.

**WRT 108A English Composition II for Non-Native Speakers of English: Module A**

1 credit hour, 1 periods (1 lec.)

Continuation of WRT 107. Includes beginning practice in reading, analyzing, and discussing various types of text and beginning practice in writing analytical or critical papers.

*Prerequisite(s):* With a C or better: WRT 101 or 101S or 107.

*Information:* WRT 108A, 108B and 108C together constitute WRT 108. A student may concurrently enroll in WRT 108A, 108B and 108C. *Information:* Equivalent to WRT 102A.

**WRT 108B English Composition II for Non-Native Speakers of English: Module B**

1 credit hour, 1 periods (1 lec.)

Continuation of WRT 107. Includes intermediate practice in reading, analyzing, and discussion various types of text; intermediate practice in writing analytical or critical papers; and developing basic research skills. Also includes writing a research paper.

*Prerequisite(s):* WRT 108A with a C or better or concurrent enrollment.

*Information:* WRT 108A, 108B and 108C together constitute WRT 108. A student may concurrently enroll in WRT 108A, 108B and 108C. *Information:* Equivalent to WRT 102B.

**WRT 108C English Composition II for Non-Native Speakers of English: Module C**

1 credit hour, 1 periods (1 lec.)

Continuation of WRT 107. Includes advanced practice in reading, analyzing, and discussing various types of text and advanced practice in writing analytical or critical papers.

*Prerequisite(s):* WRT 108B with a C or better or concurrent enrollment.

*Information:* WRT 108A, 108B and 108C together constitute WRT 108. A student may concurrently enroll in WRT 108A, 108B and 108C. *Information:* Equivalent to WRT 102C.

**WRT 125 Beginning Poetry Writing**

3 credit hours, 3 periods (3 lec.)

Poetry for beginners. Includes beginning poetry writing techniques, beginning evaluation and critical response to poems, and beginning original writing.

*Information:* May be taken three times for a maximum of nine credit hours.

**WRT 126 Basics of Short Story Writing**

3 credit hours, 3 periods (3 lec.)

Short fiction writing for beginners. Includes beginning fiction writing techniques, beginning critical responses to fiction, and beginning original writing.

*Information:* May be taken three times for a maximum of nine credit hours.



**WRT 140 Writing and Editing Technical Communications**

3 credit hours, 3 periods (3 lec.)

Introduction to basic concepts and techniques for writing and editing technical documents. Includes sentence structure and style; common grammar, usage, and punctuation rules; paragraph structure; common style-level problems; advanced writing-style concepts; editing in document development, publication, and use; editing technical reports; and writing a technical document.

*Prerequisite(s):* WRT 101 or 107 with a grade of C or better.

**WRT 140A Writing and Editing Technical Communications: Module A**

1 credit hour, 1 periods (1 lec.)

Introduction to concepts and techniques for writing and editing technical documents at the beginning level. Includes sentence structure and style; common style-level problems; advanced writing-style concepts; editing in document development, publication, and use; and editing technical reports.

*Prerequisite(s):* WRT 101 or 107 with a grade of C or better or required score on writing assessment test.

*Information:* WRT 140A, 140B and 140C together constitute WRT 140. A student may concurrently enroll in WRT 140A, 140B and 140C.

**WRT 140B Writing and Editing Technical Communications: Module B**

1 credit hour, 1 periods (1 lec.)

Introduction to concepts and techniques for writing and editing technical documents at the intermediate level. Includes common grammar, usage, and punctuation rules; common style-level problems; writing-style concepts; editing in document development, publication, and use; and editing

*Prerequisite(s):* WRT 140A with a grade of C or better or concurrent enrollment in WRT 140A and 140C.

*Information:* WRT 140A, 140B and 140C together constitute WRT 140. A student may concurrently enroll in WRT 140A, 140B and 140C.

**WRT 140C Writing and Editing Technical Communications: Module C**

1 credit hour, 1 periods (1 lec.)

Introduction to concepts and techniques for writing and editing technical documents at the advanced level. Includes common grammar, usage, and punctuation rules; paragraph structure; common style-level problems; writing-style concepts; editing in document development, publication, and use; editing technical reports; and writing a technical document.

*Prerequisite(s):* WRT 140B with a grade of C or better or concurrent enrollment in WRT 140A and 140B.

*Information:* WRT 140A, 140B and 140C together constitute WRT 140. A student may concurrently enroll in WRT 140A, 140B and 140C.

**WRT 154 Career Communications**

3 credit hours, 3 periods (3 lec.)

Job related writing skills for use in career communications. Includes writing for audiences and situations at the beginning and intermediate levels, applying business writing and organization conventions, completing job-related forms at the beginning and intermediate levels, and writing resumes.

*Prerequisite(s):* WRT 090 or 096 with a C or better or required score on writing assessment test.

*Information:* WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

**WRT 154A Career Communication: Job Related Writing Principles & Skills**

1 credit hour, 1 periods (1 lec.)

Job-related writing principles and skills. Includes writing for audiences and situations at the beginning level, and applying business writing and organization conventions.

*Prerequisite(s):* WRT 090 or 096 with a C or better or required score on writing assessment test.

*Information:* WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

**WRT 154B Career Communications: Basic Job Related Correspondence**

1 credit hour, 1 periods (1 lec.)

Writing skills for basic job-related correspondence. Includes completing job-related forms at the beginning level, and writing resumes.

*Prerequisite(s):* WRT 154A with a C or better or concurrent enrollment.

*Information:* WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

**WRT 154C Career Communications: Basic Job Related Reports**

1 credit hour, 1 periods (1 lec.)

Writing skills for basic job-related reports. Includes writing for audiences at the intermediate level, and completing job-related forms at the intermediate level.

*Prerequisite(s):* WRT 154B with a C or better or concurrent enrollment.

*Information:* WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

**WRT 162 Literary Magazine Workshop**

3 credit hours, 3 periods (3 lec.)

Creative magazine publication. Includes review of college literary magazines, critical review, magazine design and editing, magazine production techniques, as well as printing and distribution.

*Information:* May be taken two times for a maximum of six credit hours.

**WRT 196 Independent Studies in Writing**

1-4 credit hours, 3-12 periods (3-12 lab)

Independent projects in writing to be arranged with the instructor.

*Information:* May be taken four times for a maximum of sixteen credit hours.

**WRT 205 Introduction to Poetry Writing**

3 credit hours, 3 periods (3 lec.)

Writing contemporary poetry. Includes poetry writing techniques, evaluation and critical response to poems, and original writing.

*Prerequisite(s):* WRT 102 or 108 with a C or better.

**WRT 206 Short Story Writing**

3 credit hours, 3 periods (3 lec.)

Short fiction writing. Includes fiction writing techniques, critical responses to fiction, and original writing.

*Prerequisite(s):* WRT 102 or 108 with a C or better.

**WRT 207 Creative Nonfiction**

3 credit hours, 3 periods (3 lec.)

Creative nonfiction writing. Includes techniques of creative nonfiction writing, original writing, and critical responses to nonfiction.

*Prerequisite(s):* WRT 102 with a grade of C or better.

*Information:* Consent of instructor is required to enroll in this course.

**WRT 215 Advanced Poetry Writing**

3 credit hours, 3 periods (3 lec.)

Advanced poetry writing workshop. Includes continued focus on techniques of writing, evaluation and critical responses to poetry, and original writing. Also includes more intensive study of contemporary poets and poetry.

*Prerequisite(s):* WRT 125 or 205 with a C or better.

*Information:* Consent of instructor is required to enroll in this course. May be taken four times for a maximum of twelve credit hours.

**WRT 216 Advanced Fiction Writing**

3 credit hours, 3 periods (3 lec.)

Advanced techniques of fiction writing. Includes advanced techniques of fiction writing, original writing, and critical response to fiction. Also includes preparing manuscripts for publication.

*Prerequisite(s):* WRT 206 with a C or better.

*Information:* Consent of instructor is required to enroll in this course. May be taken four times for a maximum of twelve credit hours.

**WRT 217 Advanced Creative Nonfiction**

3 credit hours, 3 periods (3 lec.)

Advanced techniques of creative nonfiction writing. Includes advanced original writing, advanced critical responses to nonfiction, and marketing techniques.

*Prerequisite(s):* WRT 207 with a grade of C or better.

*Information:* Consent of instructor is required to enroll in this course. May be taken four times for a maximum of twelve credit hours.

**WRT 226 Special Projects in Fiction**

3 credit hours, 3 periods (3 lec.)

Advanced fiction writing for book-length projects. Includes techniques for book-length fiction writing, original writing and/or revision process, critical responses to fiction, and marketing and publishing of fiction books.

*Prerequisite(s):* WRT 216 with a C or better.

*Information:* Consent of instructor is required to enroll in this course. May be taken four times for a maximum of twelve credit hours.

**WRT 254 Advanced Professional Communications**

3 credit hours, 3 periods (3 lec.)

Business writing and communication strategies and practices. Includes how to develop and improve business communication skills. Also includes how to apply business writing strategies in professional fields.

*Prerequisite(s):* With a C or better: WRT 102 or 108.

**WRT 285 Pima Writers' Workshop**

2 credit hours, 2 periods (2 lec.)

Writing of fiction, nonfiction, poetry, and stories for children. Includes techniques of writing, publishing trends and approaches, and criteria for evaluating writing. Also includes the opportunity for participants to have their writing critiqued and presentations by professional authors, editors, and agents.

*Information:* May be taken five times for a maximum of ten credit hours.

# Center for Training and Development

## Clock Hour Modules

### Business and Office

#### **BO 700 Basic Office Skills**

49 clock hours

Basic skills to organize and maintain office filing systems. Includes basic skills in Microsoft Windows, Word, and Excel. Also includes how to develop telephone skills for the office.

#### **BO 701A Document Formatting I**

30 clock hours

Create business documents using keyboard Pro 4 and Microsoft Word software. Includes how to save a file, create a folder, print, edit a document.

#### **BO 701B Document Formatting for Medical Office Specialist (MOS)**

40 clock hours

Introduction to typing memos and emails for medical related business. Includes the basics of document formatting, and word processing, such as creating and saving documents. Includes an overview of editing features and how to block and modify block letter format for letters and envelopes. Also includes completing forms using a typewriter.

#### **BO 701C Document Formatting for File Clerk**

30 clock hours

Introduction to creating and formatting business documents using the Keyboarding Pro 4 and Microsoft Word software packages. Includes creating, saving, editing and printing document files as well as editing features which include copying and pasting text, changing text fonts, using font attributes such as bolding and italic, and other basic document editing features.

#### **BO 702A Record keeping I**

30 clock hours

Basic filing skills to function efficiently in a modern office environment. Includes alphabetizing by surname, surnames with first initials, surnames with titles or degrees, company names, individual and business names, abbreviations and single letters used in individual and firm names.

#### **BO 702B Record keeping for Medical Office**

32 clock hours

Introduction to records management with emphasis on the needs of a medical office. Includes how to organize and maintain files using various filing keys along with an introduction to financial record keeping.

#### **BO 702C Record keeping for Unit Clerk**

25 clock hours

Introduction to records management with emphasis on the needs of a medical office. Includes how to organize and maintain files using various filing keys along with an introduction to financial record keeping.

#### **BO 705 Business Composition**

24 clock hours

Basic business writing skills for composing business letters, memos, emails and reports. Includes memorizing correct spelling of 150 common words used in business along with dictionary skills for checking spelling of other words. Also includes proof reading skill training included to find and correct mistakes in order to ensure quality work.

**BO 706 Business Calculation I**

30 clock hours

Introduction to basic electronic office calculator and its use in the business environment. Includes parts of the machine and function, as well as how functions relate to business practice. Includes an introduction to the proper operation of a 10-Key calculator using touch method of numeric entry. Includes the effective use of the subtotal, non-add and subtracting keys and changing the paper tape. Also includes the addition, subtraction, multiplication and division of whole numbers.

**BO 708 Principles of Accounting I**

20 clock hours

Introduction to accounting principles and concepts. Includes accounting vocabulary, process, and equation. Also includes types of business organizations and preparation of the income statement, balance sheet, and statement of owner's equity.

**BO 709 Microsoft Word I**

25 clock hours

Introduction to basics of Microsoft Word with emphasis on creation of new documents and editing of existing documents using alignments, font changes and inserting pictures. Includes how to create a flyer with an inserted graphic image.

**BO 710A Office Practice I**

75 clock hours

Basic skills needed to function efficiently in a modern office environment. Includes filing, mail handling, basic record keeping, spelling of commonly misspelled business words, converting dates to number format and soft skills such as stress and time management. Also includes the proper use and operation of common office equipment.

**BO 710B Office Practice for MOS I**

73 clock hours

Basic medical office skills. Includes the basics of filing in a medical office, proper telephone skills, use of a facsimile machine, and other office machines.

**BO 710C Medical Billing and Insurance**

31 clock hours

Basic office practices for a health care record keeping. Includes cover medical insurance claims processing terminology and how medical insurance works.

**BO 710D Office Practice for Coders**

5 clock hours

Basic foundations for coding in the health care field. Includes a focus on work improvement skills. Also includes the concepts of time management, stress management, organization, memory tools, and positive communication techniques.

**BO 710G Office Practice for Business**

34 clock hours

Overview of basic office skills for business including how to prepare a deposit slip, write checks and balance a register, reconcile a bank statement, and record petty cash transactions. Includes use of office equipment, record keeping and file management, customer service skills, and basic work and personal development skills.

**BO 711 Medical Insurance**

30 clock hours

An overview of confidentiality laws with respect to health information, insurance terminology, and insurance forms. Includes how to verify patient insurance information and how different insurance organizations work.

**BO 713 Medical Terminology and Human Anatomy I**

18 clock hours

Basic medical terminology and human anatomy pertaining to the structural parts of the body. Includes analysis of medical terms that combine suffixes and prefixes to other words; work with and describe terms used to describe pathological appearance, growth, and spread of tumors. Also includes introduction to the name, location, physical description, and functions of the organs that make up the digestive system; and introduction to the physical properties of X-Rays.

**BO 714 Introduction to Diagnostic Coding**

8 clock hours

Overview of Diagnostic Coding. Includes the concepts of ICD-9 and format of ICD9-CM along with the Centers for Medicare and Medicaid Services (CMS) guidelines. Also includes using diagnostic codes and different versions of coding information. Also includes information on current and accurate coding guidelines.

**BO 716 Introduction to Procedural Coding**

15 clock hours

Introduction to the structure of Current Procedural Coding (CPT) coding. Includes an overview of CPT coding that is a part of a uniform and reliable nationwide system of recording patient data. Also includes procedural coding for common outpatient services in radiology, laboratory, and surgical departments.

**BO 718 Microsoft Excel I**

35 clock hours

Introduction to Microsoft Excel spreadsheet applications. Includes spreadsheets concepts, formulas and functions, and formatting worksheets and cells. Also includes an introduction to working with charts and graphics.

**BO 719 Microsoft Access I**

35 clock hours

Microsoft Access at the beginning level. Includes an overview of Access, creating a new database, creating tables, and working with tables. Includes creating and using select queries and reports. Also includes creating a report that contains totals.

**BO 725 Health Care Statistics**

30 clock hours

Concepts and skills to use statistics in the healthcare environment. Includes computing percentages and tracking inpatient census. Includes the role of statistics in analyzing and reporting vital records, such as ambulatory and long-term care statistics. Also includes how to enhance presentations through the use of statistics.

**BO 730 Quality Management**

30 clock hours

Quality management skills for medical offices. Includes how to access and improve quality using external and internal quality concerns and strategies. Includes how to manage quality in organizations that employ peer review processes. Also includes utilization, risk management, and medical staff credentialing as quality management tools.

**BO 750 Keyboard Operator**

80 clock hours

Introduction to typing and keyboarding skills. Includes introduction to the computer system, keyboarding skills by touch and typing for accuracy and time.

**BO 760 Microsoft Windows**

30 clock hours

Basic skills to operate software in a Microsoft Windows environment. Includes the basics of vocabulary, use of general features of Windows; started and shutting down Windows; use of the control panel, My Computer, and Explorer; and accessory applications.

**BO 760A Microsoft Windows XP**

30 clock hours

Basic skills to operate software in a Microsoft Windows environment. Includes the basics of vocabulary, use of general features of Windows, getting started and shutting down Windows, use of the control panel. My Computer, Explorer, and accessory applications.

**BO 800 Business English**

20 clock hours

Basic English grammar for use in business. Includes punctuation, capitalization, parts of speech, sentence patterns, and proper tense.

**BO 801A Document Formatting II**

50 clock hours

Continuation of BO 701A. Includes creating business documents using Keyboarding Pro 4 and Microsoft Word computer software. Includes how to create interoffice memos, emails, business letters, envelopes, and forms in a mailable format. Also includes the basic operation of an electronic typewriter.

**BO 803A Telephone Procedures**

25 clock hours

Techniques to effectively use the telephone in an office environment. Includes the use of white and yellow page telephone directories, proper identification when answering a phone, obtaining and verifying information by phone, placing local and long distance calls, operation of a multi-button telephone, knowing time zone of person calling or being called, and awareness and use of miscellaneous telephone services.



**BO 806 Business Calculation II**

20 clock hours

Continuation of BO 706. Includes elements of electronic office calculator to introduce student to time saving features needed for large volume calculations. Includes new +/- selector keys and decimal keys. Includes using calculator to calculate discounts with percentages and multiplication of decimals and fractions. Also includes how business calculations are used in business areas.

**BO 807 Record keeping II**

64 clock hours

Continuation of BO 702A. Includes additional filing procedures, such as filing names with conjunctions, compound names, names with numbers, and identical names. Includes how to apply alphabetizing rules and the proper use of filing equipment. Includes additional preparation and maintenance of financial records for a business. Also includes preparation of bank deposit slips, writing and recording of checks, recording of petty cash transactions, and reconciling monthly bank account statements.

**BO 807A Record keeping for Legal Office**

47 clock hours

Records management for a legal office. Includes filing procedures, such as filing names with conjunctions, compound names, and firm names. Includes how to apply alphabetizing rules and the proper use of filing equipment and aids. Includes how to use consecutive number filing system. Includes the preparation and maintenance of financial records for a legal office with recording and tracking work hours for billing, tracking and recording time cards. Also includes common bookkeeping and accounting terminology.

**BO 807B Record keeping for Accounting**

36 clock hours

Records management for accounting office personnel. Includes how to organize and maintain files using various filing keys both alpha and numeric. Also includes time card billing, tracking and management.

**BO 808 Principles of Accounting II**

20 clock hours

Introduction to T accounts. Includes how to use T accounts to record, analyze and report financial information. Includes how to post journal entries, prepare worksheets and make adjustments, prepare financial statements. Also includes accounting for sales and accounts receivable, purchases and accounts payable, cash transactions, and payroll.

**BO 809 Microsoft Word II**

60 clock hours

Continuation of BO 709. Additional Microsoft Word document editing and management features are introduced including file management, advanced page setup, preparing reports, tables, Auto Text, templates and wizards.

**BO 810A Office Practice II**

76 clock hours

Continuation of BO 710A, Office Practice I. Includes an emphasis on clerical skills. Includes acceptable working qualities, communication skills, rules for typing numbers, use of Office Reference Manual and abbreviation rules for typing, telephone skills, and spelling of commonly misspelled business words.

**BO 810B Legal Office Practice I**

75 clock hours

Introduction to the law office. Includes ethics and malpractice issues, staff manuals, quality management, marketing, and planning. Also includes basic client service, communication skills, legal office timekeeping, and billing.

**BO 811 Microsoft Excel II**

30 clock hours

Continuation of BO 718. Includes spreadsheet concepts expanded to include Excel Lists, managing multiple worksheets and workbooks, working with what-if analysis, working financial functions, collaborating on a workbook and web page, and developing an Excel application.

**BO 812 Microsoft Access II**

30 clock hours

Continuation of BO 719. Includes techniques to enhance database designs using the principles of normalization and table relationships. Also includes principles of table design, principles of table relationships, table design techniques, designing select queries, customizing form designs, working with data access pages, and customizing reports.

**BO 813 Medical Terminology and Human Anatomy II**

48 clock hours

Continuation of BO 713. Includes locating and describing the organs of the urinary system, male and female reproductive systems, cardiovascular system, lymphatic system, and respiratory system. Also includes major organs and parts of nervous system; composition and function of blood; structure and functions of bones; joints and muscles; and the skin and its accessory structures.

**BO 814 Intermediate Diagnostic Coding**

70 clock hours

Continuation of BO 714. Includes increased proficiency in applying skills to types and levels of coding using current coding standards. Also includes specialty codes, late effects codes, injury codes, adverse effects codes, and abstract codes with an emphasis on developing the critical thinking and analysis skills needed in a medical office.

*Prerequisite(s):* BO 714.

**BO 815 Intermediate Procedural Coding**

70 clock hours

Continuation of BO 716. Expansion of coding information to specialty codes used for medical services provided to patients. Includes techniques and application to the various types and levels of coding utilizing the current coding standards. Includes the differences in coding in a hospital and a physician's office. Also includes an introduction to abstract coding with an emphasis on developing the coding analytical skills.

**BO 816 3M Computerized Medical Coding**

30 clock hours

Introduction to the 3M Computerized Medical Coding system. Includes an introduction to the 3M Codefinder Coding and Reimbursement System. Also includes how to access the Help, Reference and accessory screens in 3M coding; coding using codes and reference guides in 3M Coding; determination of CPT-4 Codes in 3M Coding.

**BO 817A Introduction to Medical Transcription**

20 clock hours

Overview, concepts, and skills for medical transcription. Includes proofreading standards, utilization of reference and resource materials, use of medical reports, and the basic functions of medical transcription machines. Also includes ergonomic issues and techniques.

**BO 818 Computerized Patient Accounting**

30 clock hours

Introduction to computerized patient billing. Includes how to set up new patient records, use a computer for patient billing, and process patient transactions. Also includes how to produce reports, patient statements, and claims.

**BO 819 Human Anatomy for Medical Coding**

7 clock hours

Brief introduction to the parts and systems that make up the human body. Includes concepts to familiarize coders with the structure of the human body to visualize where the medical services being coded take place on the human body. Also includes a general overview of the body.

**BO 820 Patient Records and Communication Skills**

21 clock hours

Skills to maintain patient records. Includes communication skills for a Unit Clerk in a hospital.

**BO 825 Medical Office Transcription**

20 clock hours

This course teaches the student skills in proofreading, common medical and surgical words unique to transcribed documents, Pharmacology, as well as punctuation and abbreviations commonly used. The student will learn how to use transcription equipment and reference books such as the PDR, Medical and Surgical Word Books. Upon completion, the student will demonstrate a proficiency in the transcription of a variety of healthcare documents.

**BO 828 Electronic Medical Records (EMR)**

90 clock hours

Concepts and skills needed to create and use Electronic Medical Records. Includes how to create and use digital technology to store and analyze patient data, quality information, and statistical data for use in patient billing. Also includes statistical tracking and reporting, managing quality, and other tracking and reporting.

**BO 830 Office Procedures**

0-35 clock hours

Student will learn about functions and procedures used in a wide range of activities found in small to large offices. Module includes business operations, office functions, documentation production, communication skills, office duties, tasks and responsibilities, office equipment, professional attitude and image, Internet exploration and job evaluation. Same as Administrative Assistant program.

**BO 835 Records Management**

1-45 clock hours

This module provides instruction on the fundamentals of records management. The module includes: development of a records management program, management of active records and inactive records, electronic records, forms management, mail center operations, reprographics, manuals, records center operations and equipment and archives management. Same as Administrative Assistant program.

**BO 840 Business Meeting**

0-30 clock hours

The student will receive instruction on the fundamentals of the business meeting. The module includes: planning a business meeting, making arrangements for a business meeting, agenda and minute preparation and business meeting protocol. Same as Administrative Assistant program.

**BO 845 Document Preparation**

0-30 clock hours

The student will learn preparation of business documents in a professional manner using the latest version of Microsoft Word. The module includes the preparation of professional business letters, memorandums, forms, and reports. Same as Administrative Assistant program.

**BO 850 Business Communications**

1-45 clock hours

The student will learn the development of basic business communication skills through reading, listening, speaking, and writing effectively. The module will include learning the composition of effective communication using modern and established methods: email, professional letters, memorandums, reports, listening, nonverbal and speaking skills.

**BO 855 Payroll Records and Procedures**

0-30 clock hours

The student will experience a comprehensive exposure to the practice of accepted methods of payroll preparation used in the business community. The module includes the calculation of payroll by using accepted calculation techniques and meeting the requirements of payroll taxing authorities. Same as Administrative Assistant program.

**BO 860 Microsoft Publisher**

0-45 clock hours

This course provides instruction on how to use Publisher tools to create newsletters, brochures, business forms, web pages and other professional documents. The course includes procedures on how to produce quality documents that combine text with graphics, illustrations, and photographs that will be suitable for outside commercial printing.

**BO 901A Advanced Document Formatting**

22 clock hours

Continuation of BO 701A-C. Advanced document formatting builds on previous document formatting. Includes specialty letter formatting, special notations, business reports, working with columns, draft and final document use, and using shared documents. Also includes importing and exporting documents and the need for accuracy in all aspects of document formatting and composition.

**BO 901B Type Columns**

9 clock hours

Basics of arranging and typing material in a column form. These columns are sometimes referred to as tables or lists.

**BO 906 Business Calculation III**

12 clock hours

Continuation of BO 806. Includes advanced office calculator operations such as dividing decimals, using product accumulations, use of memory key, constant multiplication and division, and use of the percentage key.

**BO 907 Recordkeeping III**

30 clock hours

Continuation of BO 807 Record keeping II. Includes how to maintain payroll, tax and earnings records for employees; computing and preparing invoices with discounts; and mastering common bookkeeping and accounting terminology.

**BO 908 Principles of Accounting III**

80 clock hours

Skills and techniques to calculate payroll taxes, such as employer and employee Social Security, Medicare, federal and state unemployment taxes, and employee income taxes. Includes how to pay and report payroll taxes. Includes accounting for inventory and adjustments to accrued and prepaid expense items, and accrued and deferred income items. Also includes how to prepare financial statements and closing the accounting records at the end of the accounting cycle.

**BO 909 Microsoft Word III**

105 clock hours

Continuation of BO 809. Includes advanced Microsoft Word features for use in typical office. Includes how to embed a table chart or watermark in a document; generating form letters, mailing labels and directories; creating newsletters and online forms.

**BO 909A Microsoft Word IIIA**

15 clock hours

Concepts and skills to use Microsoft Word for business. Includes how to generate form letters, mailing labels, and directories.

**BO 910B Legal Office Practice II**

75 clock hours

Continuation of BO 810B Legal Office Practice I. Includes the concepts and skills to perform effectively and efficiently in a legal office environment. Includes accounting for client trust funds; calendaring, docket control, case management; and human resource management in a legal firm. Includes the management of space, equipment and law library for the firm. Also includes the preparation of various types of legal documents.

**BO 911 Microsoft Excel I 2003**

30 clock hours

Spreadsheet applications using Microsoft Excel at the intermediate level. Includes Excel Lists, managing multiple worksheets and workbooks, working with what-if analysis, working with financial functions, collaborating on a workbook and Web page, and developing an Excel application.

**BO 912 Microsoft Access 2003 II**

30 clock hours

Microsoft Access at the intermediate level. Includes techniques to enhance database designs using the principles of normalization and table relationships. Also includes principles of table design, principles of table relationships, table design techniques, designing select queries, customizing form designs, working with data access pages, and customizing reports.

**BO 913 QuickBooks**

90 clock hours

QuickBooks basics used to automate the accounting process. Includes an overview of QuickBooks; a popular computerized accounting system which performs the same reporting, tracking and reporting as a manual accounting system. Also includes how to use QuickBooks to produce the level of management information and control as a manual system but with greater speed and efficiency.

**BO 914 Microsoft FrontPage**

90 clock hours

Course provides basic web page design skills for an entry-level administrative support position. Skills include creating a FrontPage Web site using a template; creating a new FrontPage Web; using images, hot spots, bookmarks, and Excel to create web pages; creating and using interactive forms on the web; using frames in web pages.

*Prerequisite(s):* Keyboarding speed of 25wpm, with max. 5 errors in a 5-minutes timed writing; MS Windows; MS Word; MS Excel, or CTD modules BO750, BO760, BO709, and BO811.

*Corequisite(s):* Test of Adult Basic Education (Scores: R-9.0; M-8.0; L-7.0)

**BO 915 Advanced Procedural Coding**

40 clock hours

Continuation of BO 714 and 716. Includes advanced skills for both diagnostic and procedural coding in all medical environments. Includes concepts and applications of types and levels of coding with an emphasis on abstract coding and critical analysis. Also includes the study of the three levels of the Healthcare Common Procedure Coding system (HCPCS) and the role of Current Procedural Terminology coding within this system.

**BO 917 Microsoft PowerPoint**

30 clock hours

Create and use Microsoft PowerPoint to prepare and present professional quality business presentations. Includes the use of viewing options to develop slides. Also includes how to import information, use templates, and automate portions of the presentation.

**BO 918 Microsoft Excel III**

30 clock hours

Continuation of BO 811. Includes creating and using templates in Excel to automate the process of building new spreadsheets and workbooks. Also includes linking workbooks to consolidate data, linking worksheet and a chart to a Word document and saving the document with the link, recording a macro and assigning it to a tool bar button and menu command, and using Visual Basic Applications (VBA) to create procedures to automate work in Excel.

**BO 920 Microsoft Access III**

30 clock hours

Continuation to BO 812. Includes advanced techniques for using complex queries, creating more efficient forms and reports, and automating forms. Also includes parameter and action queries, query joins and cross-tab queries using advanced form techniques, creating basic macros to automate forms, using macros to provide user interaction and automate tasks, and using advanced report techniques.

**BO 921 Comprehensive Microsoft Excel**

0-105 clock hours

This course provides comprehensive instruction in Microsoft Excel. The course includes procedures for creating worksheets, writing formulas, creating charts, working with the web feature, hyperlinks and the integration feature, creating queries, templates, and using macros and complex problem solving. Accuplacer scores: RC-56;A-32;SS-70; High School diploma or GED; Keyboard 35 wpm/5 errors; math/ calculator proficiency; one year documented office experience.

**BO 922 Comprehensive Microsoft Access**

0-105 clock hours

This course provides comprehensive instruction in Microsoft Access. The course includes procedures for creating, querying, and maintaining databases, and sharing data among applications through reports and forms, and data access pages. Also included is an introduction of new features such as: automatic error checking, using smart tags, importing and linking Share Point lists to Access databases, setting macro security, and changing the font size for SQL queries.

**BO 927 Comprehensive MS PowerPoint**

0-60 clock hours

This module provides comprehensive instruction for PowerPoint. The module includes instruction on how to: use design templates to create presentations; use the outline tab and clip art to create a slide show; create a presentation to view on the Web; use visuals to enhance slide shows; modify visual elements and presentation formats; use collaboration features to deliver and schedule online broadcasts; work with Macros and Visual Basic for Applications (VBA); create self-running presentations; use the Microsoft Office online Web site to import files. Same as Administrative Assistant program.

**BO 929 Comprehensive Microsoft Word**

0-120 clock hours

This course provides comprehensive instruction in Microsoft Word. The course includes procedures for creating documents such as: letters; flyers; research papers; resumes and cover letters; web pages; documents with tables, charts or watermarks; mail merge documents; newsletters; online forms; working with macros and Visual Basic for Applications (VBA); master documents, an Index, a Table of Contents, and XML; integration features and collaboration features. High School diploma or GED; Keyboard 35 wpm/5 errors; Accuplacer scores: RC-56, A-32, SS-70; One year documented Math/Calculator proficiency.

**BO 991 Office Practice Externship**

60 clock hours

Synthesize skills learned in the classroom to the office environment. Includes the application of office skills that utilize work ethics, customer service, communication, peer and supervisor relationships, and general practices.

**BO 991A Legal Office Externship**

60 clock hours

Synthesize skills learned in the classroom to the legal office environment. Includes the application of office skills that utilize work ethics, customer service, communication, peer and supervisor relationships, and general legal office practices.

**BO 992 Medical Office Externship**

120 clock hours

Synthesize skills learned in the classroom to the medical office environment. Includes the application of medical office skills that utilize work ethics, customer service, communication, peer and supervisor relationships, and general practices.

**BO 992A Accounting Assistant Externship**

120 clock hours

Synthesize skills learned in the classroom to the accounting office environment. Includes the application assistant office skills that utilize work ethics, customer service, communication, peer and supervisor relationships, and general accounting assistant practices.

**BO 992B Medical Coding Externship**

120 clock hours

Synthesize skills learned in the classroom to the medical office environment. Includes the application of medical coding and office skills that utilize work ethics, customer service, communication, peer and supervisor relationships, and general practices.

**BO 993 Medical Transcription Externship**

240 clock hours

Synthesize skills learned in the classroom to the medical office environment. Includes the application of medical transcription and office skills that utilize work ethics, customer service, communication, peer and supervisor relationships, and general practices.

## Department of Transportation

**DT 700 Pre-Apprenticeship in Highway Construction Trades**

185 clock hours

Overview of highway construction trades. Includes training in automotive mechanics, welding, machining, construction, applied mathematics, Occupational Safety and Health Act (OSHA), safety, flagging certification, basic computer and employability skills. Also includes research in work and personal preferences in highway construction trades.

*Information:* Provides the student with experience in highway construction trades in order to make an informed choice as to which area of the industry to choose for employment.

## Food Service

**FS 705 Sanitation and Safety Fundamentals**

60 clock hours

Introduction to kitchen safety and sanitation. Includes health department regulatory guidelines, use of chemicals, procedures for kitchen housekeeping and maintenance.

**FS 720 Tools, Utensils, and Equipment**

75 clock hours

Introduction to the identification, use and care for basic equipment and tools within the kitchen. Includes use of kitchen scales for weighing and measuring of food products. Includes the use of standardized recipes, portion and quality control. Also includes the identification, safe use and care of cutlery used in commercial kitchen.

**FS 725 Cold Foods-Salads and Dressings**

90 clock hours

Introduction to the identification and preparation of fruits and vegetables utilizing basic preparation techniques. Includes basics of salad dressing preparation including emulsions and vinaigrettes. Also includes production and presentation of cold salads.

**FS 735 Introduction to Hot Foods**

70 clock hours

Introduction to the production of hot food items. Includes fundamentals of vegetable, starch, and breakfast preparation methods. Also includes identification and use of commercial cooking equipment and cutlery.

**FS 745 Hot Foods-Vegetables, Starches, Pastas, Grains**

60 clock hours

Introduction to the identification, selection and preparation of vegetable, and starch production. Includes practice in various moist and dry heat cooking methods.

**FS 760 Hot Foods-Stocks, sauces, and Soups**

80 clock hours

Introduction to stocks, sauces and soups. Includes classical stocks, mother sauces, roux, liaison, cream and broth soups, and cooking techniques.



**FS 765 Culinary Principles- Terminology, Record Keeping, and**

40 clock hours

Service Introduction to culinary principles. Includes terminology within the commercial kitchen, concepts for using standardized recipes, basic rules of table service, and service procedures. Also includes food ordering, inventory and record keeping methods.

**FS 770 Hot Foods-Introduction to Meat and Seafood Cookery**

60 clock hours

Introduction to basic techniques of meat and seafood cookery. Includes sanitation standards and processing guidelines for safe handling of meat products.

**FS 775 Record Keeping/Menu Planning B**

40 clock hours

In contrast to FS765, this module teaches the student proper record keeping methods for maintaining par levels and ordering of foodstuffs. Proper use of standardized recipes and nutritional balance of menu items is also presented.

**FS 845 Knife Skills**

60 clock hours

Advanced knife skills development and cuts used in food preparation. Includes practice in the identification and preparation of fruits and vegetables utilizing basic preparation techniques.

**FS 850 Hot Foods-Breakfast Cookery**

30 clock hours

Introduction to Breakfast Cookery. Includes preparation of eggs, breakfast meats, cereals, pancakes, potatoes. Also includes discussion of *mise en place* for breakfast setup.

**FS 865 Culinary Principles: Advanced Record Keeping**

60 clock hours

Continuation of record keeping concepts. Includes menu development, budgeting principles, menu and recipe costing, calculation of food cost, and inventory control.

**FS 885 Hot Foods-Intermediate Meat and Seafood Cookery**

60 clock hours

Continuation of meat and seafood cookery skills. Includes the development of meat and seafood cookery techniques. Includes inspection and grading standards. Also includes discussion of primal and retail meat cuts.

**FS 900 Food Service Externship**

60 clock hours

A supervised cooperative work program for students enrolled in the Center for Training and Development Food Service training. Instructor coordinates work experience with students and participating employers.

**FS 901 Sanitation and Regulatory Issues**

30 clock hours

Overview of specific causes of food-borne illnesses and types of bacteria and viruses. Includes precaution measures, Hazard Analysis and Critical Control Point (HACCP) analysis, and proper storage, cooking, and holding temperatures for potentially hazardous food items.

**FS 910 Bakery-Quick Breads**

120 clock hours

Introduction to the practice of bakery operations and production of quick breads. Includes planning and scheduling for bakeshop production. Also includes an overview of safety and sanitation, bakery vocabulary, and ingredients.

**FS 915 Tools and Equipment**

0-98 clock hours

This module provides comprehensive knowledge of the tools and equipment used within the commercial kitchen. Students are required to achieve proficiency with kitchen weights and measurements.

*Prerequisite(s):* Accuplacer scores: Reading Comp-31; Arithmetic-34; Sentence Skills-35

**FS 920 Bakery-Yeast Doughs**

175 clock hours

Introduction to the practice of bakery operations and production of yeast dough. Includes planning and scheduling for bakeshop production. Also includes an overview of safety and sanitation, bakery vocabulary, and ingredients.

**FS 925 Cold Foods/Garde Manger Skills**

130 clock hours

Advanced practice and skills for cold kitchen production. Includes garnish techniques, hors d'oeuvres, appetizers, plate presentation and centerpieces. Also includes specialty and entree salad production.

**FS 930 Bakery-Cakes, Cookies, and Pies**

160 clock hours

Introduction to practice of bakery operations and production of cakes, pies, and cookies. Includes planning and scheduling for bakeshop production. Also includes discussion of safety and sanitation, bakery vocabulary, and ingredients.

**FS 970 Bakery-Sauces and Fillings**

30 clock hours

Introduction to sauces and fillings used for bakery and pastry production. Includes discussion of thickening agents, special considerations for cooking, and holding of cream fillings.

**FS 985 Hot Foods-Advanced Meat and Seafood Cookery**

135 clock hours

Fabrication of meat and advanced seafood preparation. Includes the development of meat and seafood cookery skills. Also includes meat carving techniques.

**FS 997 Food Service Pre-Apprenticeship Externship**

160 clock hours

A supervised cooperative work program for students enrolled in Center for Training and Development Food Service Pre-Apprenticeship certificate. Instructor coordinates work experience with students and participating employers. Work hours may be applied toward requirements of Journeyman Cook apprenticeship through the American Culinary Federation.

## Health Information Technology

**HI 501 Introduction to Health Care and Public Health in the U.S.**

15 clock hours

A survey of how health care and public health are organized and services delivered in the U.S. Includes public policy, relevant organizations and their interrelationships, professional roles, legal and regulatory issues, and payment systems. Also includes health reform initiatives in the U.S.

**HI 502 Culture of Health Care**

15 clock hours

Overview for individuals not familiar with health care, contents address job expectations in health care settings. Also includes how care is organized inside a practice setting, privacy laws, and professional and ethical issues encountered in the workplace.

**HI 503 Terminology in Health Care and Public Health Settings**

15 clock hours

Explanation of specific terminology used by workers in health care and public health. Includes the use of health care terminology in health care technology roles and electronic health records.

*Information: Note: This is NOT a course in data representation or standards.*

**HI 504 Introduction to Information and Computer Science**

15 clock hours

Introduction for students without an IT background, provides a basic overview of computer architecture; data organization, representation, and structure; structure of programming languages; and networking and data communication. Includes basic terminology of computing.

**HI 505 History of Health Information Technology in the U.S.**

15 clock hours

Traces the development of information technology (IT) systems in health care and public health beginning with the experiments of the 1950's, 1960's and culminating in the Health Information Technology for Economic and Clinical Health Act (HITECH) Act. Introduces the concept of meaningful use.

**HI 506 Health Management and Information Systems**

30 clock hours

A theory component specific to health care and public health applications. Introduction to health information technology (IT) standards, health-related data structures, software applications, and enterprise architecture in health care and public health organizations.

**HI 507 Fundamentals of Health Workflow Process Analysis & Redesign**

45- clock hours

Fundamentals of health workflow process analysis and redesign, as a necessary component of complete practice automation, includes topics of process validation and change management.

*Information:* This entire Component is estimated to require 20 total contact/instructional hours plus 40-60 additional hours of independent or team work, depending on the learning activities and assessments used within each unit.

**HI 508 Usability and Human Factors**

30 clock hours

Discussion of rapid prototyping, user-centered design and evaluation, usability; understanding effects of new technology and workflow on downstream processes. Includes facilitation of a unit-wide focus group or simulation.

**HI 509 Introduction to Project Management**

20 clock hours

Overview of project management tools and techniques. Includes how to create and follow a project management plan.

**HI 510 Planning, Management, and Leadership for Health IT**

20 clock hours

A practical experience with a laboratory component, addressing approaches to assessing, selecting, and configuring EHRs to meet the specific needs of customers and end-users.

**HI 511 Professionalism & Customer Service in the Health Environment**

15 clock hours

Development of skills necessary to communicate effectively across the full range of roles that will be encountered in health care and public health settings. Includes ethical and cultural aspects of communication.

**HI 512 Quality Improvement**

20 clock hours

Introduction to health IT concepts and practice workflow redesign as instruments of quality improvement. Includes establishing a culture that supports increased quality and safety. Also includes approaches to assessing patient safety issues and implementing quality management and reporting through electronic systems.

**HI 513 Working with Health IT Systems**

30 clock hours

Laboratory work with simulated systems or real systems with simulated data. Includes individuals experiencing the role of practitioners using these system and what is happening under the hood. Includes experience with threats to security to appreciate the need for standards, high levels of usability, and how errors can occur. Also includes hands-on experience in computer labs and on-site in health organizations.

**HI 514 Working in Teams**

15 clock hours

Concepts for individuals specifically contemplating careers in public health agencies; and overview of specialized public health applications such as registries, epidemiological databases, bio-surveillance, and situational awareness and emergency response. Includes information exchange issues specific to public health.

**HI 515 Public Health IT**

30 clock hours

Concepts for individual specifically contemplating careers in public health agencies; an overview of specialized public health applications such as registries, epidemiological databases; bio-surveillance, and situational awareness and emergency response. Includes information exchange issues specific to public health.

**HI 516 Networking and Health Information Exchange**

20 clock hours

More in-depth analysis of data mobility including the hardware infrastructure (wires, wireless, and devices supporting them), the ISO stack, standards, Internet protocol, federations and grids. Includes the Nationwide Health Information Network (NHIN) and other nationwide approaches.

**HI 517 Training and Instructional Design**

30 clock hours

Overview of learning management systems, instructional design software tools, teaching techniques and strategies, evaluation of learner competencies, and maintenance of training records. Includes measurements of training program effectiveness.

**HI 518 Installation and Maintenance of Health IT Systems**

30-45 clock hours

Concepts and techniques to install and maintain health IT systems. Includes testing prior to implementation and the principles underlying system configuration. Also includes hands-on experiences in computer labs and on-site in the health organizations.

**HI 519 Configuring EHRs**

45 clock hours

A practical, hands-on experience with a laboratory component configuring an Electronic Health Record. Includes how to assess, select, and configure EHRs to meet the specific needs of customers and end-users.

**HI 520 Special Topics on Vendor Specific Systems**

15 clock hours

Overview of the most popular vendor systems, highlighting the features of each as they would relate to practical deployments. Includes differences between the systems.

## Health Occupations

**HO 700 First Aid and CPR-Health Providers**

6-8 clock hours

Instruction for health providers in cardiopulmonary resuscitation (CPR) and standard first aid for use with infants, children, and adults. Includes injuries, treatment of wounds, sudden illnesses, special events, use of Automated External Defibrillators (AEDs), and multi-rescuer methodology.

**HO 715 LPN RE-entry**

200 clock hours

Review and update of content and skills corresponding to current clinical practice for Licensed Practical Nurses preparing to reenter practice. Includes LPN scope of practice, cultural considerations and diversity, communication skills and legal requirements and the skills and tools of the LPN.

**HO 723 Registered Nurse Refresher**

240 clock hours

This course provides a basic review and update of content corresponding to current clinical practice for Registered Nurses preparing to re-enter nursing practice or to transition to an acute or community based health care facility.

**HO 725 Direct Support Professional**

120 clock hours

This training will prepare individuals to provide physical assistance to people with disabilities, who live in various settings, so that they remain independent and function at his/her highest level.

**HO 810 Nursing Assistant**

120 clock hours

Introduction to Nursing Assistant (NA) skills. Includes the scope of practice concepts, processes, principles, and theory of nursing practice for the NA. Includes a skill lab and clinical work and meets the Arizona State Board of Nursing (AZBN) requirements for certification testing to become a Certified Nursing Assistant (CNA).

**HO 818 Introduction to Anatomy and Microbiology**

150 clock hours

Introduction to the systems of the human body. Includes contextualized content in body systems, basic microbiology, and nutrition. Also includes references to normal, abnormal, and pathologic occurrences found within health care settings such as hospitals, long-term and assisted living care centers, clinics, physician and dental practices, labs, urgent and emergency care facilities, and community care centers. Also includes health care responsibilities and roles associated with biology, microbiology, and nutrition.

**HO 819 Nursing Care Fundamentals**

60 clock hours

Training in performing mathematical drug dosage and I.V. calculations. Includes presentations designed to aid in the development of life and school skills.

**HO 855 Practical Nurse Proficiency Evaluation**

150 clock hours

This program is designed to provide the nursing student who has completed two or more semesters of a registered nursing program or an equivalent program with a practical nurse certificate. Students must demonstrate theoretical competence and competence performing nursing skills in a nursing skills laboratory and hospital clinical setting.

**HO 861 Introduction to Practical Nursing (PN)**

220 clock hours

Introduction to the Practical Nurse (PN) scope of practice and the nursing process. Includes the concepts, processes, principles and theory of nursing practice for the PN. Includes foundation skills, such as ethical and legal considerations, and health and illness throughout the life span, with an emphasis on the application of critical thinking in nursing practice. Also includes the application of concepts in the Skills Lab and clinical work.

*Prerequisite(s):* HO818, HO819 or equivalency; Accuplacer scores of R-31, M-34, S-46

*Recommendation:* Completion of a Nurse assistant class and Anatomy and Physiology class, and Math calculations class satisfies prerequisites.

**HO 872 Practical Nursing A**

220 clock hours

Concepts and skills in medical-surgical nursing care. Includes interventions, pharmacology, pathophysiology, lab and diagnostics related to fluid and electrolyte antacid-base balance and shock, the hematopoietic, neurological, integumentary, gastrointestinal and respiratory systems. Includes an emphasis in utilizing the nursing process at the Practical Nurse (PN) level care.

*Prerequisite(s):* HO861.

**HO 874 Practical Nursing B**

220 clock hours

Continuation of HO 872. Includes skills for medical-surgical nursing care interventions, pharmacology, pathophysiology, lab and diagnostics related to the musculoskeletal, immune, cardiovascular, renal, endocrine, sensory and reproductive systems. Also includes an emphasis on utilizing the nursing process at the Practical Nurse (PN) level one.

*Prerequisite(s):* HO 872.

**HO 882 Maternal-Child Nursing for the PN**

120 clock hours

This module includes theory, skills labs, and clinical assignments. The student will learn nursing care of the client in the prenatal, labor, birth and postpartum phases. The student will also learn the care of preterm, term, and post term newborns and the newborn with congenital malformations.

*Prerequisite(s):* HO810, HO818, HO819, HO712, HO861, HO872, HO874; TABE scores: R-12.9, M-9.0, L-9.0

**HO 887 Pediatric Nursing for the PN**

120 clock hours

This module includes theory, skills labs, and clinical assignments. The student will learn to provide nursing care to the child with a sensory, neurologic, musculoskeletal, respiratory, cardiovascular, blood or blood-forming organ, lymphatic system, gastrointestinal, genitourinary, skin disorder, metabolic disorders or conditions, communicable diseases, and emotional or behavioral disorders.

*Prerequisite(s):* HO810, HO818, HO819, HO712, HO861, HO872, HO874, HO882; TABE scores: R-12.9, M-9.0, L-9.0

**HO 890 Transition to Practice for the Practical Nurse**

120 clock hours

The module includes theory, skills labs and clinical assignments and a comprehensive final exam. The student will learn about the role of the board of nursing, scope of practice for the LPN, leadership, NCLEX review, applications for licensure, the employment process, community nursing services, cultural diversity, alternative therapies, malpractice issues, and stress management.

*Prerequisite(s):* HO810, HO818, HO819, HO712, HO861, HO872, HO874, HO882, HO887; TABE scores: R-12.9, M-9.0, L-9.0

**HO 900 Introduction to Surgical Technology I**

86 clock hours

Introduction to the field of surgical technology. Includes an introduction to microbiology, infection, immunology, wound healing, pharmacology, and anesthesia. Also includes personal, professional responsibilities, and environmental and work place safety.

*Information: HO 900A, 900B, 900C, 900D, 900E together constitute HO 900.*

**HO 900A Professional Responsibilities and Relations**

6 clock hours

Introduction to the surgical technologist role, responsibilities, and relations. Includes an overview of the healthcare environment. Also includes characteristics and professional relationships of a surgical technologist.

*Information: HO 900A, 900B, 900C, 900D, 900E together constitute HO 900.*

**HO 900B Environmental and Workplace Safety**

6 clock hours

Introduction to the surgical technologist environment and workplace safety. Includes how to identify aspects of the physical environment in a surgical suite.

*Information: HO 900A, 900B, 900C, 900D, 900E together constitute HO 900.*

**HO 900C Introduction to Microbiology, Infection, and Immunology**

29 clock hours

Introduction to microbiology. Includes the historical background of microbiology, structure and characteristics of microorganisms, and relationship between humans, pathogens, and bacteria. Also includes the general mechanisms that protect the human body from harmful foreign substances.

*Information: HO 900A, 900B, 900C, 900D, 900E together constitute HO 900.*

**HO 900D Wound Healing**

6 clock hours

Introduction to wound healing. Includes how tissues react and are restored to normal function following trauma.

*Information: HO 900A, 900B, 900C, 900D, 900E together constitute HO 900.*

**HO 900E Pharmacology and Anesthesia**

39 clock hours

Introduction to pharmacology and anesthesia. Includes how to convert equivalents from one systems to another and accurately identify, mix, and measure drugs for patient use. Also includes the are and precaution used in the administration of drugs used in the care of surgical patients. Introduction to the field of surgical technology.

*Information: HO 900A, 900B, 900C, 900D, 900E together constitute HO 900.*

**HO 910 Introduction to Surgical Technology II**

45 clock hours

Continuation of HO 900 Introduction to Surgical Technology I. Includes the principles and practices of the First Scrub Role with an emphasis on aseptic techniques and patient care.

*Information: HO 910A, 910B, 910C together constitute HO 910.*

**HO 910A Aseptic Techniques**

10 clock hours

Continuation of HO 900 Introduction to Surgical Technology I. Includes the principles and practices of the scrub role with an emphasis on aseptic techniques.

*Information: HO 910A, 910B, 910C, together constitute HO 910.*

**HO 910B Patient Care**

20 clock hours

Continuation of HO900 Introduction to Surgical Technology I. Includes the principles and practices of patient care in the surgical setting. Also includes the proper and safe execution of procedures and use of equipment.

*Information: HO 910A, 910B, 910C, together constitute HO 910.*

**HO 910C Surgical Instrumentation**

15 clock hours

Continuation of HO 900 Introduction to Surgical Technology I. Includes the principles and practices of surgical case instrumentation. Also includes the proper use of instruments

*Information: HO 910A, 910B, 910C, together constitute HO 910.*



**HO 920 A&P: Skin, Skeletal, Muscle**

96-100 clock hours

Introduction to anatomy and physiology with a structural orientation. Includes the organization of the human body, cells, tissues, organs, integumentary system, skeletal system, and muscular system.

**HO 922 A&P: Nerves, Senses, Endocrine**

96-100 clock hours

Introduction to nerves, senses, and endocrine glands with a functional orientation. Includes the central nervous system, peripheral nervous system, autonomic nervous systems, and special senses. Also includes major endocrine glands, major hormones and their functions.

**HO 924 A&P: Blood, Heart, Vessels, and Lymph**

96-100 clock hours

Components and characteristics of blood, heart, vessels, and lymphatic system with a functional orientation. Includes blood, cardiac circulatory system, vascular circulatory system, and lymphatic system in relationship to the circulatory system.

**HO 926 A&P: Respiratory and Digestive**

55-100 clock hours

Components and characteristics of respiratory and digestive anatomy and physiology. Includes the structure, function, and regulatory mechanisms of the respiratory system. Also includes the structure and function of the digestive system.

**HO 928 A&P: Urinary and Reproductive**

55-100 clock hours

Components and characteristics of urinary and reproductive surgery. Includes the structure, function, and regulatory mechanisms of the urinary system. Also includes the structure and function of the male and female reproductive systems.

**HO 930 Surgical Procedures**

96 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes general; obstetrics and gynecology; eyes, ears, nose, and throat (EENT); plastic and reconstruction; genitourinary; orthopedic; thoracic; peripheral vascular cardiac; and neurology procedures.

*Information: HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.*

**HO 930A General Surgical Procedures**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on general surgery.

*Information: HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.*

**HO 930B Obstetrics and Gynecology Surgery**

12 clock hours

Principles concepts, and techniques to use surgical procedure in a surgical setting. Includes as emphasis on obstetrics and gynecology surgery. Information: HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.

**HO 930C Eye, Ear, Nose, and Throat (EENT) Surgery**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on eye, ear, nose, and throat (EENT) surgery.

*Information: HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.*

**HO 930D Plastic and Reconstructive Surgery**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on plastic and reconstructive surgery.

*Information: HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.*

**HO 930E Genitourinary Surgery**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on genitourinary surgery and the male reproductive system.

*Information: HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.*

**HO 930F Orthopedic Surgery**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on orthopedic surgery.

*Information:* HO 930A, 930B, 930C, 930D, 930E, 930F, 930G, 930H together constitute HO 930.

**HO 930G Thoracic and Peripheral Vascular (PV) Surgery**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on thoracic and peripheral vascular (PV) surgery.

*Information:* HO 930A, 930B, 930C, 930D, 930E, 930F, , 930G, 930H together constitute HO 930.

**HO 930H Cardiac and Neurology Surgery**

12 clock hours

Principles, concepts, and techniques to use surgical procedures in a surgical setting. Includes an emphasis on cardiac and neurology surgery.

*Information:* HO 930A, 930B, 930C, 930D, 930E, 930F, , 930G, 930H together constitute HO 930.

**HO 940 Communications and Computers for Surgical Technologists**

40 clock hours

Concepts and techniques to enhance communications. Includes the principles of communication and leadership in the surgical setting. Includes ethical, moral, and legal responsibilities with a focus on patient needs, consent of surgery, and the Patient Bill of Rights. Also includes how to use computers as a communication tool and technical device within the operating room.

*Information:* HO 940A, 940B, 940C together constitute HO 940.

**HO 940A Interpersonal Relations for Surgical Technologists**

12 clock hours

Concepts and techniques to enhance interpersonal relations. Includes the hospital departments that relate to the surgical suite in providing quality patient care. Also includes the principles of communication and leadership in the surgical setting.

*Information:* HO 940A, 940B, 940C together constitute HO 940.

**HO 940B Ethical and Legal Considerations**

16 clock hours

Concepts and principles of ethical, moral and legal responsibilities. Includes a focus on patient needs, consent of surgery, and the Patient Bill of Rights.

*Information:* HO 940A, 940B, 940C, together constitute HO 940.

**HO 940C Computers**

12 clock hours

Terminology and techniques to provide the surgical technologist with the means to identify the basic components of a computer system and to operate a computer utilizing Word processing, Internet browser, and email. Also includes how to use computers as a communication tool and technical device within the operating room.

**HO 941 Electricity for Surgical Technologists**

30 clock hours

Principle concepts and use of electricity in the surgical suite. Includes the terminology and components of an electrosurgical system. Also includes how to safely utilize the electrosurgical system in the operating room.

**HO 942 Physics for Surgical Technologists**

27 clock hours

Principle concepts and use of physics in the surgical suite. Includes how to demonstrate the application of physics as a surgical technologist.

**HO 943 Robotics for Surgical Technologist**

24 clock hours

Principle concepts, components, and use of robotics in the surgical suite. Includes how to apply the law of motion to robotic movement in the pre-operative, intra-operative, and post-operative use of robotics. Also includes safe patient care practices.

**HO 950CL Surgical Technologist Clinical I**

110 clock hours

Application of surgical technologist coursework in a clinical setting. Includes a requirement to complete a portion of the required 140 cases in surgical technologist clinical role. Includes the application of knowledge to demonstrate a surgical style similar to that used by the surgeon.

**HO 953CL Surgical Technologist Clinical II**

110 clock hours

Application of surgical technologist coursework in a clinical setting. Includes a requirement to complete a portion of the required 140 cases in surgical technologist clinical role. Includes the application of knowledge to demonstrate a surgical style similar to that used by the surgeon.

**HO 956CL Surgical Technologist Clinical III**

120 clock hours

Application of surgical technologist coursework in a clinical setting. Includes a requirement to complete a portion of the required 140 cases in surgical technologist clinical role. Includes the application of knowledge to demonstrate a surgical style similar to that used by the surgeon.

**HO 990 Surgical Technologist Externship I**

120 clock hours

Application of surgical technologist coursework in an externship setting. Includes a requirement to complete a portion of the required 140 cases in surgical technologist clinical role. Includes the application of knowledge to demonstrate a surgical style similar to that used by the surgeon.

**HO 995 Surgical Technologist Externship II**

120 clock hours

Application of surgical technologist coursework in an externship setting. Includes a requirement to complete a portion of the required 140 cases in surgical technologist clinical role. Includes the application of knowledge to demonstrate a surgical style similar to that used by the surgeon.

## Job Success

**JS 720 Employment and College Success Skills**

30-60 clock hours

Introduction to skills needed to be successful in both college and the workplace. Includes time management, study and test taking skills, connecting to college and community resources, budgeting and fiscal management, job search skills, differences in work environments, life management, and diversity awareness.

## Nursing Assistant

**NA 810 Nursing Assistant**

150 clock hours

Introduction to nursing assisting. Includes body systems and common diseases, basic nursing assisting skills, providing client care, providing restorative care, providing long-term care, home health care, and certification requirements.

*Prerequisite(s):* Accuplacer: Reading 40, Arithmetic 21, Sentence Skills 35.

## Practical Nursing

**PN 861 Introduction to Practical Nursing**

220 clock hours

Introduction to the Practical Nurse (PN) scope of practice and the nursing process. Includes the concepts, processes, principles and theory of nursing practice for the PN. Includes foundation skills, such as ethical and legal considerations, and health and illness throughout the life span, with an emphasis on the application of critical thinking in nursing practice. Also includes the application of concepts in the Skills Lab and clinical work.

*Prerequisite(s):* HO 818, HO 819 or equivalency: Accuplacer score of R-31, M-34, S-46.

*Recommendation:* Completion of a Nurse assistant class and Anatomy and Physiology class, and Math calculations class satisfies prerequisites.

**PN 872 Practical Nursing A**

220 clock hours

Concepts and skills in medical-surgical nursing care. Includes interventions, pharmacology, pathophysiology, lab and diagnostics related to fluid and electrolyte antacid-base balance and shock, the hematopoietic, neurological, integumentary, gastrointestinal and respiratory systems. Includes an emphasis in utilizing the nursing process at the Practical Nurse (PN) level of care.

*Prerequisite(s):* PN 861.

**PN 874 Practical Nursing B**

220 clock hours

Continuation of PN 872. Includes skills for medical-surgical nursing care interventions, pharmacology, pathophysiology, lab and diagnostics related to the musculoskeletal, immune, cardiovascular, renal, endocrine, sensory and reproductive systems. Also includes an emphasis on utilizing the nursing process at the Practical Nurse (PN) level of care.

*Prerequisite(s):* PN 872.

**PN 882 Maternal-Child Nursing for Practical Nurse**

120 clock hours

This module includes theory, skills labs, and clinical assignments. The student will learn nursing care of the client in the prenatal, labor, birth and postpartum phases. The student will also learn the care of pre-term, term and post term newborns and the newborn with congenital malformations.

*Prerequisite(s):* NA810, HO818, HO819, PN861, PN 872, PN874.

**PN 887 Pediatric Nursing for the Practical Nurse**

120 clock hours

This module includes theory, skills labs, and clinical assignments. The student will learn to provide nursing care to the child with a sensory, neurologic, musculoskeletal, respiratory, cardiovascular, blood or blood-forming organ, lymphatic system, gastrointestinal, genitourinary, skin disorder, metabolic disorders or conditions, communicable diseases, and emotional or behavioral disorders.

*Prerequisite(s):* NA810, HO818, HO819, PN 861, PN 872, PN874, PN 882.

**PN 890 Transition to Practice for the Practical Nurse**

120 clock hours

The module includes theory, skills labs and clinical assignments and a comprehensive final exam. The student will learn about the role of the board of nursing, scope of practice for the LPN, leadership, NCLEX review, applications for licensure, the employment process, community nursing services, cultural diversity, alternative therapies, malpractice issues, and stress management.

*Prerequisite(s):* NA810, HO818, HO819, PN861 PN 872, PN 874, PN 882 PN 887.

## Surgical Technology

**SG 900 Introduction to Healthcare**

86 clock hours

Introduction to the hospital environment, the history of surgery, and medical terminology as it applies to the health care setting. Includes an introduction to legal, ethical and accountability issues in a health care setting. Also includes personal responsibilities, professional responsibilities, and environmental and work place safety.

*Prerequisite(s):* HO818 or BIO160IN or BIO201IN.

**SG 910 Introduction to Instrumentation, Equipment and Sterilization**

106 clock hours

Classifications, names, and components of surgical instruments and equipment used in the surgical setting. Includes microbiology and how it applies in the operating room environment to decontamination, sterilization, and disinfection of instruments and equipment. Also includes the computer as a communication tool and technical device; and principle concepts of robotics, physics and electricity in a healthcare setting.

*Prerequisite(s):* HO818 or BIO160IN or BIO201IN.

**SG 920 Anesthesia and Surgical Pharmacology**

35 clock hours

Introduction to the fundamentals of pharmacology and pharmacy practice. Includes pharmacological terminology, types of anesthesia, drug origins, methods of administration, and drug handling techniques. Also includes basic math calculations, safe and accurate drug preparation, and distribution of sterile and non-sterile medications. Emphasis is on the surgical technologist's role in drug packaging, administration, labeling, and classification in routine and emergency situations.

*Prerequisite(s):* HO818 or BIO160IN or BIO201IN.

**SG 930 Patient Care**

23 clock hours

Examination of the entire perioperative experience of the patient undergoing surgery. Includes pre-admission, transportation, and positioning. Also includes considerations for special populations, such as geriatric, pediatric, diabetic, and physically challenged patients. Also includes sentinel events in the operating room, perceptions of death and dying, the needs of dying patients, and coping skills for the patient's family.

*Prerequisite(s):* HO818 or BIO160IN or BIO201IN.

**SG 950LB Surgical Lab Procedures I**

110 clock hours

Classroom presentations and laboratory demonstrations of surgical procedures. Includes a review of anatomy and related pathophysiology, an introduction to the operating room using mock lab procedures, and an introduction to pediatric and adult surgery. Also includes basic ear, nose, throat and OB/GYN procedures based on current industry standards. The student will work in the laboratory performing set-ups, practicing procedures, and learning standards of teamwork and organization.

*Prerequisite(s):* HO818 or BIO160IN or BIO201IN.

**SG 960LB Surgical Lab Procedures II**

165 clock hours

Classroom presentations and laboratory demonstrations of surgical procedures, such as general and genitourinary procedures. Includes concepts of robotic use in surgery based on current industry standards. Also includes a review of anatomy; and diseases and disorders of the respiratory system, digestive system, urinary system, endocrine system, and male and female reproductive systems. Classroom presentations on all specialties are included.

*Prerequisite(s):* SG950LB.

**SG 970LB Surgical Lab Procedures III**

125 clock hours

Classroom presentations and laboratory demonstrations of surgical procedures, including a review of the operating room and surgery using mock lab procedures. Includes orthopedic, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiothoracic, peripheral vascular, and neurosurgical procedures based on current industry standards. Also includes a review of anatomy, and diseases and disorders of the integumentary, musculoskeletal, nervous, and cardiovascular systems. Classroom presentations on all specialties are included.

*Prerequisite(s):* SG960LB.

**SG 990 Surgical Technology Externship I**

250 clock hours

Assisting surgical team members with daily preoperative and postoperative duties of a student surgical technologist while under the direct supervision of a staff surgical technologist and a registered nurse. Includes one-on-one training in a facility providing surgical services, progressing through rotations into the first scrub role for minor procedures and the second scrub role in major cases. At the completion of the externship rotations the student will be scrubbing in the first scrub role for most procedures when appropriate.

*Prerequisite(s):* SG970LB.

**SG 995 Surgical Technology Externship II**

276 clock hours

Assisting surgical team members with daily preoperative and postoperative duties of a student surgical technologist while under the direct supervision of a staff surgical technologist and a registered nurse. Includes one-on-one training in a facility providing surgical services, progressing through rotations into the first scrub role for minor procedures and the second scrub role in major cases. At the completion of the externship rotations the student will be scrubbing in the first scrub role for most procedures when appropriate. Also includes a review in preparation for the National Surgical Technology Certification Exam.

*Prerequisite(s):* SG990.

## Transportation and Logistics

### **TD 600 Commercial Driver's License Permit Preparation - ESL Level 1**

1-80 clock hours

Overview and preparation for the Commercial License Permit with English as a Second Language component. Includes general knowledge of USDOT regulations, hours of service, license requirements, and Class A License with endorsements: Tank, Doubles, and Triples to obtain a Commercial Driver's License permit.

### **TD 601 Commercial Driver's License Permit Preparation-ESL Level 2**

1-160 clock hours

Continuation of TD 600. Overview and preparation for the Commercial Driver's License Permit with English as a Second Language component. Includes general knowledge of USDOT regulations, hours of service, license requirements, and Class A License with endorsements: Tank, Doubles, and Triples to obtain a Commercial Driver's License permit.



# Other Educational Programs

Workforce Response Programs  
Apprentice-Related Instruction  
Center for Training and Development (CTD) Programs



# Workforce Response Programs

The programs and courses in this section are provided as a service to external agencies, usually on a contractual basis. Students are selected for these programs and courses by the contractual agency, and generally are not open to the general public. Please contact Workforce Development and Continuing Education for more information at 520-206-6593

## Business and Industry

The Business and Industry certificates and degrees are designed for a variety of purposes to meet the needs of business, industry, and government agencies. They can be customized for clientele in need of a specific credential.

### Business and Industry Technology — Associate of Applied Science Degree

The Associate of Applied Science degree is available for a variety of purposes to meet the needs of business, industry, and government agencies. It can be customized for apprenticeship, for workforce development, and for special clientele in need of a custom credential.

The intent of the technical electives is to provide students a body of knowledge and skills that is coherent and provides them opportunities for either a new career or career advancement. The choice of these electives usually requires a partnership between the College and another organization.

**General Education Requirements - A grade of C or better is required for graduation.**

*Course lists for each General Education category listed below can be found starting on page 74.*

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
<b>Subtotal.</b> .....	<b>19-21</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

Technical Electives .....	41-43
<b>Subtotal.</b> .....	<b>41-43</b>
<b>Total credits as displayed</b> .....	<b>60-63</b>

### Advanced Business and Industry Technology — Certificate for Direct Employment

General Education courses are required for certificates that exceed 29 credits

**General Education Requirements - A grade of C or better is required for graduation.**

*Course lists for each General Education category listed below can be found starting on page 74.*

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	3
<b>Subtotal.</b> .....	<b>6</b>

Course Number	Course Title	Credit Hours
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**Required Core Courses - A grade of C or better is required for graduation.**

Technical Electives .....	16-53
Complete 16-59 credit hours from Business or Industry Technical courses with the approval of a faculty advisor or instructional dean.	
<b>Total credits as displayed</b> .....	<b>16-59</b>

## Basic Business and Industry Technology — Certificate for Direct Employment

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
Electives	Technical Electives. ....	3-15
Complete 3-15 credit hours from Business or Industry Technical courses with the approval of a faculty advisor or instructional dean.		
<b>Total credits as displayed</b> . . . . .		<b>3-15</b>

## Advanced Business and Industry Technology –Natural Gas Utility – Certificate for Direct Employment

This certificate is designed to provide natural gas utility fundamentals for entry-level employment in the energy field. This is a workforce certificate specifically designed to meet employer needs.

### What can I do with this degree?

- Career Options:** Apply skills learned to increase opportunities or success in the workforce.
- Locations:** Community Campus
- Department/Contact Information:** Academic Dean: 520-206-6593

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 111	Basic Safety for the Building Trades . . . . .	1
BCT 112	Construction Mathematics, Communication, and Employability . . . . .	1
BCT 202	Construction Business Management . . . . .	3
BUS 148	Ethics in the Workplace . . . . .	3
CMN 120	Business and Professional Communications . . . . .	3
CPD 104	Career and Personal Development . . . . .	3
GTW 101*	Writing for the Trades and Technical Operations . . . . .	3
NGT 101	Introduction to the Natural Gas Industry . . . . .	3
REA 112*	Critical Reading . . . . .	4
STU 230	Dynamics of Leadership . . . . .	3
<b>Subtotal.</b> . . . . .		<b>27</b>
<b>Total:</b> . . . . .		<b>27</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

## Basic Business and Industry Technology –Natural Gas Utility – Certificate for Direct Employment

This certificate is designed to provide natural gas utility fundamentals for entry-level employment in the energy field. This is a workforce certificate specifically designed to meet employer needs.

### What can I do with this degree?

- Career Options:** Apply skills learned to increase opportunities or success in the workforce.
- Locations:** Community Campus
- Department/Contact Information:** Academic Dean: 520-206-6593

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 111	Basic Safety for the Building Trades .....	1
BCT 112	Construction Mathematics, Communication, and Employability .....	1
CPD 104	Career and Personal Development .....	3
GTW 101*	Writing for the Trades and Technical Operations .....	3
NGT 101	Introduction to the Natural Gas Industry .....	3
<b>Subtotal:</b>		<b>11</b>
<b>Total:</b>		<b>11</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

## Advanced Business and Industry Technology – Fabrication Welding – Certificate for Direct Employment

Courses prepare students for entry level welding positions in Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW). Students who complete this certificate have demonstrated advanced skills in all aspects of welding, such as structural fabrication, ornamental, and working with exotic metals.

This certificate is **not open to the general public**. Please contact the Community Campus for more information, 520-206-6593.

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation</b>		
GTM 105*	Applied Technical Mathematics .....	3
WLD 110	Basic Arc and Oxyacetylene Welding .....	4
WLD 115*	Blueprint Reading/Estimating.....	4
WLD 160*	Arc Welding .....	4
WLD 261	Gas Metal Arc Welding.....	4
WLD 262*	Gas Tungsten Arc Welding .....	4
WLD 263*	Layout and Fabrication Welding.....	4
<b>Subtotal.</b>		<b>27</b>
<b>Total</b>		<b>27</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

## Basic Business and Industry Technology – Gas Tungsten Arc Welding – Certificate for Direct Employment

Basic development of welding skills. Students who complete this certificate have demonstrated basic skills in Gas Tungsten Arc Welding (GTAW)/ tungsten inert gas (TIG) Welding for entry level aviation, culinary, and exotic metal welding jobs.

This certificate is **not open to the general public**. Please contact the Community Campus for more information, 520-206-6593.

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation</b>		
GTM 105*	Applied Technical Mathematics .....	3
WLD 110	Basic Arc and Oxyacetylene Welding .....	4
WLD 115*	Blueprint Reading/Estimating.....	4
WLD 262*	Gas Tungsten Arc Welding .....	4
<b>Subtotal.</b>		<b>15</b>
<b>Total</b>		<b>15</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

## Basic Business and Industry Technology – GMAW/FCAW Welding – Certificate for Direct Employment

Basic development of welding skills. Students who complete this certificate have demonstrated basic skills in ornamental welding to include Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW).

This certificate is **not open to the general public**. Please contact the Community Campus for more information, 520-206-6593.

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation</b>		
GTM 105*	Applied Technical Mathematics .....	3
WLD 110	Basic Arc and Oxyacetylene Welding .....	4
WLD 115*	Blueprint Reading/Estimating. ....	4
WLD 261	Gas Metal Arc Welding. ....	4
<b>Subtotal.</b>		<b>15</b>
<b>Total</b>		<b>15</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

## Basic Business and Industry Technology – Shielded Metal Arc Welding – Certificate for Direct Employment

Basic development of welding skills. Students who complete this certificate have demonstrated basic skills in field structural welding.

This certificate is **not open to the general public**. Please contact the Community Campus for more information, 520-206-6593.

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation</b>		
GTM 105*	Applied Technical Mathematics .....	3
WLD 110	Basic Arc and Oxyacetylene Welding .....	4
WLD 115*	Blueprint Reading/Estimating. ....	4
WLD 160*	Arc Welding .....	4
<b>Subtotal.</b>		<b>15</b>
<b>Total</b>		<b>15</b>

\* This course has a prerequisite, co-requisite or recommendation. See course description section.

# Corrections

These programs are part of the Public Safety and Emergency Services Institute. For more information contact the Division Dean/Director at 520-206-6350.

## County Corrections Training Academy — Certificate for Direct Employment

This certificate program is open to those persons selected for employment by the Pima County Sheriff's Department, Bureau of Corrections, or Program Director and is awarded upon successful completion of this certificate.

**Before enrolling in this program,** you must meet certain admission requirements.

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
COR 110	County Correctional Officer Training Academy.....	18
COR 115*	Corrections Training Officer.....	3
<b>Total credits as displayed</b> .....		<b>21</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Electrical Utility Technology

## Electrical Utility Technology - Certificate for Direct Employment

This certificate is designed to provide electrical utility fundamentals for entry-level employment in the energy field. This is a workforce certificate specifically designed to meet employer needs.

### What can I do with this degree?

**Career Options:** Apply skills learned to increase opportunities for success in the workforce.

**Location:** Community Campus

**Department/Contact Information:**

Academic Dean: 520-206-6593

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 105	Professionalism in Service, Construction, Mathematics and Basic Rigging.....	3
BCT 107	Basic Safety, Hand and Power Tools and Blueprint Reading .....	3
EUT 103	Generation Steam Systems .....	3
EUT 104	Overhead and Underground Systems, Hardware, and Equipment .....	4
EUT 106	Measuring Electricity .....	3
GTM 105*	Applied Technical Mathematics .....	3
NRG 101	Energy Industry Fundamentals.....	3
WRT 101*	Writing I	
or GTW 101*	Writing for Trades and Technical Occupations .....	3
<b>Subtotal</b> .....		<b>25</b>
<b>Total credits as displayed</b> .....		<b>25</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# Emergency Medical Technology

## Emergency Medical Technology — Paramedic Certificate for Direct Employment

The paramedic certificate program increases the knowledge and skills of the I-EMT and the EMT-B in advanced life support including endotracheal intubation, cardiac arrhythmia recognition and intervention. The program also includes drug therapy, invasive procedures, advanced airway management, and I.V. therapy.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement . . . . .	3
Analysis and Critical Thinking Requirement . . . . .	3
<b>Subtotal.</b> . . . . .	<b>.6</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

All of the core courses require acceptance into the Advanced Paramedic Program.

EMT 170*	ALS Operations . . . . .	1
EMT 205*	ALS Pharmacology and Medication Administration . . . . .	3
EMT 214*	ALS Advanced Special Considerations . . . . .	2.5
EMT 218*	Paramedic National Registry Preparatory Course . . . . .	3.5
EMT 219*	ALS Foundations . . . . .	1.5
EMT 221*	ALS Airway and Ventilation . . . . .	1.5
EMT 222*	ALS Patient Assessment and Assessment Based Management . . . . .	1.5
EMT 223*	ALS Trauma Emergencies and Systems . . . . .	2
EMT 224*	ALS Medical Emergencies . . . . .	4
EMT 225*	ALS Special Medical Considerations . . . . .	2
EMT 227LC*	ALS Practicum: Clinical Lab . . . . .	3
EMT 228LC*	ALS Practicum: Vehicular Lab . . . . .	3
EMT 230*	Basic ECG Interpretation . . . . .	1.5
EMT 242*	ALS Advanced Foundations . . . . .	2
EMT 244*	ALS Advanced Medical Emergencies . . . . .	2.5
EMT 247LC*	ALS Advanced Practicum: Clinical Lab . . . . .	3
EMT 248LC*	ALS Advanced Practicum: Vehicular Lab . . . . .	3
EMT 250*	Advanced Cardiac Care . . . . .	1.5
EMT 252*	Pediatric Advanced Life Support	
or EMT 258*	Pediatric Education for Pre-Hospital Professionals . . . . .	1.5
EMT 254*	Advanced ECG Interpretation . . . . .	3
EMT 263*	Tox-Medic . . . . .	1.5
EMT 295*	ALS Independent Research . . . . .	3
<b>Subtotal.</b> . . . . .		<b>51</b>
<b>Total credits as displayed</b> . . . . .		<b>57</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Law Enforcement

For more information about the Law Enforcement programs, please contact the Public Safety and Emergency Services Institute at Community Campus, 520-206-6350.

## Basic Law Enforcement — Certificate for Direct Employment

Learn the skills necessary to become a law enforcement officer with courses in ethics, criminal investigation, police proficiencies and law. This certificate is designed for individuals working in a law enforcement position. The courses are scheduled based on agency requirements.

### Required Prerequisites:

- High school diploma or High School Equivalency (HSE) diploma
- At least 21 years of age upon completion of the academy
- No felony convictions
- U. S. Citizen
- Must possess a valid driver's license
- Physical requirement test
- Written evaluation
- Psychological evaluation
- Oral Board review
- Background investigation
- Medical evaluation
- Polygraph exam
- Other requirements that are specific to Arizona Peace Officer Standards and Training Board (AZ POST)

Completion of the program meets and exceeds the minimum P.O.S.T. requirements for entry-level employment as an Arizona peace officer.

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	3
Analysis and Critical Thinking Requirement .....	3
<b>Subtotal.</b> .....	<b>.6</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

LEN 105	Ethics and Leadership in Law Enforcement .....	3
LEN 110	Multicultural Issues in Law Enforcement .....	3
LEN 115	Interpersonal Relations in Law Enforcement .....	3
LEN 120	Introduction to Law Enforcement .....	1
LEN 125	Law and Legal Matters I .....	3
LEN 126	Law and Legal Matters II .....	3
LEN 130	Patrol Procedures .....	3
LEN 135	Traffic Enforcement and Investigation .....	3
LEN 140	Criminal Investigation .....	4
LEN 145	Community and Police Relations .....	2
LEN 150	Records and Reports .....	3
LEN 205	Police Proficiency Skills I .....	4
LEN 206	Police Proficiency Skills II .....	4
LEN 207	Police Proficiency Skills III .....	4
LEN 208	Police Proficiency Skills IV .....	4
<b>Subtotal.</b> .....		<b>.47</b>
<b>Total</b> .....		<b>53</b>

## Law Enforcement — Associate of Applied Science

### General Education Requirements - A grade of C or better is required for graduation.

Course lists for each General Education category listed below can be found starting on page 74.

Communication Requirement .....	6
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	3
AJS 225 fulfills 3 credits of this requirement. Complete a course from the Humanities/Fine Arts or the Leadership/Ethics category	
Computer Information and Literacy Requirement .....	1-3
<b>Subtotal.</b> .....	<b>16-18</b>

Course Number	Course Title	Credit Hours
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### Required Core Courses - A grade of C or better is required for graduation.

#### Law Enforcement Concentration

LEN 105	Ethics and Leadership in Law Enforcement .....	3
LEN 110	Multicultural Issues in Law Enforcement .....	3
LEN 115	Interpersonal Relations in Law Enforcement .....	3
LEN 120	Introduction to Law Enforcement .....	1
LEN 125	Law and Legal Matters I .....	3
LEN 126	Law and Legal Matters II .....	3
LEN 130	Patrol Procedures .....	3
LEN 135	Traffic Enforcement and Investigation .....	3
LEN 140	Criminal Investigation .....	4
LEN 145	Community and Police Relations .....	2
LEN 150	Records and Reports .....	3
LEN 205	Police Proficiency Skills I .....	4
LEN 206	Police Proficiency Skills II .....	4
LEN 207	Police Proficiency Skills III .....	4
LEN 208	Police Proficiency Skills IV .....	4
<b>Subtotal.</b> .....		<b>47</b>

#### Required Support Courses

AJS 101	Introduction to Administration of Justice Systems .....	3
AJS 225	Criminology .....	3
<b>Subtotal.</b> .....		<b>6</b>
<b>Total Credits as Displayed</b> .....		<b>69-71S</b>

## Apprentice-Related Instruction

Pima Community College works jointly with local and state apprenticeship groups to offer related instruction in a number of apprenticeship programs. Before students may enroll for apprentice-related instruction, they must be registered with the U.S. Department of Labor's Bureau of Apprenticeship and Training, and the organization operating a specific training program. Apprentice-related instruction at Pima Community College is offered in these areas and provides foundation courses towards the associate of applied science degree.

<b>Agency</b>	<b>Phone Number</b>	<b>Course Prefix</b>
Sheet Metal Workers Local Union 359 Sheet Metal	602-273-1388 or 602-920-2834	SMA
National Tooling and Machining Association (NTMA) Contact Division Dean of Industrial and Technical Education at PCC Machinist	520-206-7134	MAC
Arizona Builders Alliance (ABA) Electrical, Carpentry, Building and Construction	520-881-7930	BCT
Pascua Yaqui Training and Development Electrical	520-879-5844	ELT

### **Degree Program:**

Those working to gain the Business and Industry Technology Associate of Applied Science degree (trade and industrial technology option) must meet the minimum degree requirement of 64 credit hours. Students must complete 46 credit hours of apprentice-related instruction, and/or college technical courses. The college technical courses must be approved by the department chair.

# Center for Training and Development (CTD) Programs

Pima Community College’s Center for Training and Development (CTD) provides high quality training leading to immediate jobs or to job advancement in many in-demand fields. Since 1963, CTD has trained more than 40,000 individuals who wanted to gain new employment, improve their skills in their current jobs or move up the career ladder in their fields. Students learn entry-level skills or upgrade existing knowledge through training classes that provide classroom instruction, hands-on lab learning, and internships and externships. CTD boasts a 90% completion rate and an 85% job placement rate.

The Center’s non-traditional training options allow students to attend in an open-entry/open-exit enrollment year-round up to 30 hours a week during days, evenings or weekends. Each student receives a certificate at the conclusion of their training. CTD offers programs for credit, noncredit, clock-hour, and continuing education units (CEUs). Credit program information is found under the credit programming section of the catalog.

CTD clock-hour certificate programs are found below. Please contact the Center for Training and Development for most current programming information. Clock-hour offerings provide students with a method for accessing immediate employment skills related to specific occupational areas. They require student attendance as well as completion of competencies related to the career field. Clock-hour programming is offered in a variety of methods depending on the career path; it provides intensive instruction in the career field, contains integrated academic and life success skills, and provides comprehensive student support services.

Clock-hour programs have various admissions requirements depending on the programming area. Testing is required for most certificates. Please contact the Center for Training and Development at 520-206-5100 for details on specific admissions requirements for each program area.

## Business Technology

### Accounting Assistant – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-63/52.0302-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701A	Document Formatting I.....	30
BO 706	Business Calculation I.....	30
BO 708	Principles of Accounting I.....	20
BO 709	Microsoft Word I.....	25
BO 710F	Office Practice for Accounting .....	83
BO 718	Microsoft Excel I.....	35
BO 719	Microsoft Access I .....	35
BO 750	Keyboard Operator.....	80
BO 760	Microsoft Windows.....	30
BO 800	Business English.....	20
BO 801A	Document Formatting II.....	50
BO 806	Business Calculation II.....	20
BO 807B	Recordkeeping for Accounting.....	36
BO 808	Principles of Accounting II.....	80
BO 809	Microsoft Word II.....	60
BO 810A	Office Practice II.....	76
BO 811	Microsoft Excel II.....	30
BO 906	Business Calculation III.....	12
BO 908	Principles of Accounting III.....	80
BO 913	QuickBooks.....	90
<b>Total for Accounting Assistant Certificate.....</b>		<b>922</b>
<b>Optional module:</b>		
BO 812	Microsoft Access II.....	30
BO 992A	Accounting Assistant Externship.....	120
<b>Total with optional module.....</b>		<b>1072</b>

## Administrative Assistant – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-64/52.0302-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 760	Microsoft Windows .....	30
BO 830	Office Procedures .....	35
BO 835	Records Management for Administrative Assistants.....	45
BO 840	Business Meeting.....	30
BO 845	Document Preparation .....	30
BO 850	Business Communications .....	45
BO 855	Payroll Records and Procedures .....	30
BO 860	Microsoft Publisher.....	45
BO 919	Machine Transcription .....	15
BO 921	Comprehensive Microsoft Excel.....	105
BO 922	Comprehensive Microsoft Access .....	105
BO 927	Comprehensive Microsoft PowerPoint .....	60
BO 929	Comprehensive Microsoft Word.....	120
<b>Total for Administrative Assistant Certificate</b> .....		<b>695</b>

## Computer Software Applications – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 705	Business Composition .....	24
BO 709	Microsoft Word I.....	25
BO 718	Microsoft Excel I.....	35
BO 719	Microsoft Access I .....	35
BO 760	Microsoft Windows .....	30
BO 800	Business English.....	20
BO 801B	Typing for Computer Software Applications .....	26
BO 809	Microsoft Word II .....	60
BO 811	Microsoft Excel II .....	30
BO 812	Microsoft Access II.....	30
BO 909	Microsoft Word III.....	105
<b>Total for Computer Software Applications Certificate</b> .....		<b>420</b>

## Keyboard Operator

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 750	Keyboard Operator .....	80
<b>Total for Keyboard Operator</b> .....		<b>80</b>



## Office Assistant I – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701A	Document Formatting I.....	30
BO 706	Business Calculator I.....	30
BO 709	Microsoft Word I.....	25
BO 710A	Office Practice I.....	75
BO 750	Keyboard Operator.....	80
BO 760	Microsoft Windows.....	30
<b>Total for Office Assistant I.....</b>		<b>270</b>

## Office Assistant II – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-67/52.0408-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701A	Document Formatting I.....	30
BO 706	Business Calculator I.....	30
BO 709	Microsoft Word I.....	25
BO 710A	Office Practice I.....	75
BO 718	Microsoft Excel I.....	35
BO 719	Microsoft Access I.....	35
BO 750	Keyboard Operator.....	80
BO 760	Microsoft Windows.....	30
BO 800	Business English.....	20
BO 801A	Document Formatting II.....	50
BO 806	Business Calculator II.....	20
BO 807	Recordkeeping II.....	64
BO 809	Microsoft Word II.....	60
BO 810A	Office Practice II.....	76
<b>Total for Office Assistant II Certificate.....</b>		<b>630</b>

## Office Specialist – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/career-training-programs/business-technology/office-specialist.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701A	Document Formatting I.....	30
BO 706	Business Calculator I.....	30
BO 709	Microsoft Word I.....	25
BO 710A	Office Practice I.....	75
BO 718	Microsoft Excel I.....	35
BO 719	Microsoft Access I.....	35
BO 750	Keyboard Operator.....	80
BO 760	Microsoft Windows.....	30
BO 800	Business English.....	20

BO 801A	Document Formatting II	50
BO 806	Business Calculator II	20
BO 807	Recordkeeping II	64
BO 809	Microsoft Word II	60
BO 810A	Office Practice II	76
BO 811	Microsoft Excel II	30
BO 812	Microsoft Access II	30
BO 901A	Advanced Document Formatting	22
BO 906	Business Calculator III	12
BO 907	Recordkeeping III	30
BO 909	Microsoft Word III	105
BO 917	Microsoft PowerPoint	30
BO 919	Machine Transcription	15
<b>Total for Office Specialist Certificate</b>		<b>904</b>

**Optional modules**

BO 920	Microsoft Access III	30
BO 991	Office Practice Externship	60
<b>Total with optional modules</b>		<b>994</b>

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## Quickbooks – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 913	Quickbooks	90
<b>Total for Medical Office Specialist Certificate</b>		<b>90</b>

## Legal Office

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### Legal Office Procedures – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 810B	Legal Office Practice I	75
BO 910B	Legal Office Practice II	75
<b>Total for Legal Office Procedures Certificate</b>		<b>150</b>

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### Legal Office Support Staff– Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-21/22.0301-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701A	Document Formatting I	30
BO 706	Business Calculator I	30

BO 709	Microsoft Word I.....	25
BO 710A	Office Practice I.....	75
BO 718	Microsoft Excel I.....	35
BO 719	Microsoft Access I.....	35
BO 750	Keyboard Operator.....	80
BO 760	Microsoft Windows.....	30
BO 800	Business English.....	20
BO 801A	Document Formatting II.....	50
BO 807A	Recordkeeping for Legal Office.....	47
BO 809	Microsoft Word II.....	60
BO 810A	Office Practice II.....	76
BO 810B	Legal Office Practice I.....	75
BO 811	Microsoft Excel II.....	30
BO 812	Microsoft Access II.....	30
BO 901A	Document Formatting III.....	22
BO 909	Microsoft Word III.....	105
BO 910B	Legal Office Practice II.....	75
<b>Total for Legal Office Assistant Certificate.....</b>		<b>930</b>

**Optional modules**

BO 917	Microsoft PowerPoint.....	30
BO 919	Machine Transcription.....	15
BO 920	Microsoft Access III.....	30
BO 991A	Legal Office Externship.....	60
<b>Subtotal.....</b>		<b>135</b>
<b>Total with all optional modules.....</b>		<b>1065</b>

## Medical Office

### Medical Office Clerk – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 700	Basic Office Skills.....	49
BO 711	Medical Insurance.....	30
BO 713	Medical Terminology and Human Anatomy I.....	18
BO 714	Introduction to Diagnostic Coding.....	8
BO 716	Introduction to Procedural Coding.....	15
BO 750	Keyboard Operator.....	80
BO 800	Business English.....	20
<b>Total for Medical Office Clerk Certificate.....</b>		<b>220</b>

### Medical Office Specialist – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701B	Document Formatting for Medical Office Specialist.....	40
BO 709	Microsoft Word I.....	25

BO 710B	Office Practice for Medical Office Specialist I	73
BO 711	Medical Insurance	30
BO 713	Medical Terminology and Human Anatomy I	18
BO 714	Introduction to Diagnostic Coding	8
BO 716	Introduction to Procedural Coding	15
BO 718	Microsoft Excel I	35
BO 719	Microsoft Access I	35
BO 750	Keyboard Operator	80
BO 760	Microsoft Windows	30
BO 800	Business English	20
BO 809	Microsoft Word II	60
BO 909A	Microsoft Word IIIA	15
BO 992	Medical Office Externship	120
<b>Total for Medical Office Specialist Certificate</b>		<b>604</b>

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## Medical Records Technician Billing and Coding – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-46/51.0707-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 701B	Document Formatting for Medical Office Specialist	40
BO 709	Microsoft Word I	25
BO 710	Business Office Practices	34
BO 710B	Office Practice for Medical Office Specialist I	73
BO 710C	Office Practice for Medical Records Technician	31
BO 710D	Office Practice for Coders	5
BO 710G	Office Practices for Business	34
BO 713	Medical Terminology and Human Anatomy I	18
BO 718	Microsoft Excel I	35
BO 719	Microsoft Access I	35
BO 725	Health Care Statistics	30
BO 730	Quality Management	30
BO 750	Keyboard Operator	80
BO 760	Microsoft Windows	30
BO 800	Business English	20
BO 809	Microsoft Word II	60
BO 813	Medical Terminology II	48
BO 814	Intermediate Diagnostic Coding	70
BO 815	Intermediate Procedural Coding	70
BO 816	3M Computerized Medical Coding	30
BO 818	Computerized Patient Accounting	30
BO 828	Electronic Medical Records	90
BO 909A	Microsoft Word IIIA	15
BO 915	Advanced Procedural Coding	40
BO 992	Medical Office Externship	120
<b>Total for Medical Records Certificate</b>		<b>969</b>

## Medical Terminology – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 713	Medical Terminology and Human Anatomy I	18
BO 813	Medical Terminology and Human Anatomy II	48
<b>Total for Medical Terminology Certificate</b>		<b>66</b>

## Professional Medical Coding Specialist– Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 710D	Office Practice for Coders	5
BO 713	Medical Terminology and Human Anatomy I	18
BO 814	Intermediate Diagnostic Coding	70
BO 815	Intermediate Procedural Coding	70
BO 816	3-M Computerized Medical Coding	30
BO 818	Computerized Patient Accounting	30
BO 819	Human Anatomy for Medical Coding	7
BO 828	Electronic Medical Records (EMR)	90
BO 915	Advanced Procedural Coding	40
<b>Total for Professional Medical Coding Specialist Certificate</b>		<b>323</b>

## Culinary and Food Industry

### Baker’s Helper – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-05/12.0501-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
FS 705	Sanitation and Safety Fundamentals	60
FS 720	Tools, Utensils and Equipment	75
FS 725	Cold Foods-Salads and Dressings	90
FS 765	Culinary Principles-Terminology, Record Keeping, and Service	40
FS 865	Culinary Principles-Advanced Record Keeping	60
FS 900	Food Service Externship	60
FS 901	Sanitation and Regulatory Issues	30
FS 910	Bakery-Quick Breads	120
FS 920	Bakery-Yeast Doughs	175
FS 930	Bakery-Cakes, Cookies, Pies	160
FS 970	Bakery-Sauces and Fillings	30
<b>Total for Baker’s Helper Certificate</b>		<b>900</b>

## Cook's Helper – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-09/12.0505-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
FS 705	Sanitation and Safety Fundamentals .....	60
FS 720	Tools, Utensils, and Equipment .....	75
FS 725	Cold Foods-Salads and Dressings .....	90
FS 745	Hot Foods-Vegetables, Starches, Pastas, and Grains .....	60
FS 760	Hot Foods-Stocks, Sauces, and Soups .....	80
FS 765	Culinary Principles-Terminology, Record Keeping, and Service .....	40
FS 770	Hot Foods-Introduction to Meat and Seafood Cookery.....	60
FS 845	Knife Skills .....	60
FS 850	Hot Foods-Breakfast Cookery .....	30
FS 885	Hot Foods-Intermediate Meat and Seafood Cookery .....	60
FS 900	Food Service Externship .....	60
FS 901	Sanitation and Regulatory Issues.....	30
<b>Total for Cook's Helper Certificate. . . . .</b>		<b>705</b>

## Kitchen Helper – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
FS 705	Sanitation and Safety Fundamentals .....	60
FS 720	Tools, Utensils, and Equipment .....	75
FS 725	Cold Foods-Salads and Dressings .....	90
FS 735	Introduction to Hot Foods .....	70
FS 765	Culinary Principles-Terminology, Record Keeping, and Service .....	40
<b>Total for Kitchen Helper Certificate . . . . .</b>		<b>335</b>

## Pantry Cook – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-10/12.0599-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
FS 705	Sanitation and Safety Fundamentals .....	60
FS 720	Tools, Utensils and Equipment .....	75
FS 725	Cold Foods-Salads and Dressings .....	90
FS 745	Hot Foods-Vegetables, Starches, Pastas, and Grains .....	60
FS 765	Culinary Principles-Terminology, Record Keeping, and Service .....	40
FS 770	Hot Foods-Introduction to Meat, Seafood Cookery .....	60
FS 845	Knife Skills .....	60
FS 850	Hot Foods-Breakfast Cookery .....	30
FS 925	Cold Foods-Garde Manger Skills .....	130
<b>Total Pantry Cook Certificate . . . . .</b>		<b>605</b>



## Preparation Cook – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-07/12.0503-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
FS 705	Sanitation and Safety Fundamentals .....	60
FS 720	Tools, Utensils, and Equipment .....	75
FS 725	Cold Foods-Salads and Dressings .....	90
FS 745	Hot Foods-Vegetables, Starches, Pastas, and Grains .....	60
FS 760	Hot Foods-Stocks, Sauces, and Soups .....	80
FS 765	Culinary Principles-Terminology, Record Keeping, and Service .....	40
FS 770	Hot Foods-Introduction to Meat and Seafood Cookery.....	60
FS 845	Knife Skills .....	60
FS 850	Hot Foods-Breakfast Cookery .....	30
FS 865	Culinary Principles-Advanced Record Keeping .....	60
FS 885	Hot Foods-Intermediate Meat and Seafood Cookery .....	60
FS 900	Food Service Externship .....	60
FS 901	Sanitation and Regulatory Issues.....	30
FS 985	Hot Foods-Advanced Meat and Seafood Cookery.....	135
<b>Total for Preparation Cook Certificate .....</b>		<b>900</b>

## Culinary Skills Fundamentals – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-06/12.0503-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
FS 705	Sanitation and Safety Fundamentals .....	60
FS 720	Tools, Utensils, and Equipment .....	75
FS 725	Cold Foods-Salads and Dressings .....	90
FS 745	Hot Foods-Vegetables, Starches, Pastas, and Grains .....	60
FS 760	Hot Foods-Stocks, Sauces, and Soups .....	80
FS 765	Culinary Principles-Terminology, Record Keeping, and Service .....	40
FS 770	Hot Foods-Introduction to Meat and Seafood Cookery.....	60
FS 845	Knife Skills .....	60
FS 850	Hot Foods-Breakfast Cookery .....	30
FS 865	Culinary Principles-Advanced Record Keeping .....	60
FS 885	Hot Foods-Intermediate Meat and Seafood Cookery .....	60
FS 901	Sanitation and Regulatory Issues.....	30
FS 985	Hot Foods-Advanced Meat and Seafood Cookery.....	135
FS 997	Food Service Pre-Apprentice Externship.....	160
<b>Total for Culinary Skills Fundamentals Certificate .....</b>		<b>1000</b>

# Nursing

## LPN Re-Entry– Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
HO 715	LPN Re-Entry .....	200
<b>Total for LPN Re-Entry Certificate</b> .....		<b>200</b>

## Nursing Assistant – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
HO 810	Nursing Assistant .....	150
<b>Total for Nursing Assistant Certificate</b> .....		<b>150</b>

## Patient Care Technician– Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
HO 740	Patient Care Technician .....	120
<b>Total for Patient Care Technician Certificate</b> .....		<b>120</b>

## Practical Nurse - Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-54/51.3901-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
HO 810	Nursing Assistant .....	120
HO 818	Introduction to Anatomy and Microbiology .....	150
HO 819	Nursing Care Fundamentals .....	60
NA 810	Nursing Assistant .....	150
HO 861	Introduction to Practical Nursing .....	220
HO 872	Practical Nursing A .....	220
HO 874	Practical Nursing B .....	220
HO 882	Maternal-Child Nursing for the Practical Nurse .....	120
HO 887	Pediatric Nursing for the Practical Nurse .....	120
HO 890	Transition to Practice for the Practical Nurse .....	120
<b>Total for Practical Nurse Certificate</b> .....		<b>1380</b>
<b>Additional training is suggested:</b>		
HO 716	NCLEX-PN Preparation .....	30
<b>Total with optional modules</b> .....		<b>1410</b>

## RN Refresher - Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
HO 723	Registered Nurse (RN) Refresher .....	240
<b>Total for RN Refresher Certificate .....</b>		<b>240</b>

## Surgical Technology

### Surgical Technologist – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:

<https://www.pima.edu/programs-courses/gainful-employment/2017/ge-51/51.0909-Gedt.html>

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
HO 818	Introduction to Anatomy and Microbiology .....	150
SG 900	Introduction to Healthcare. ....	86
SG 910	Introduction to Instrumentation, Equipment, and Sterilization .....	106
SG 920	Anesthesia and Surgical Pharmacology .....	35
SG 930	Patient Care .....	23
SG 950	Surgical Lab Procedures I .....	110
SG 960	Surgical Lab Procedures II.....	165
SG 970	Surgical Lab Procedures III .....	125
SG 990	Surgical Technologist Externship I.....	250
SG 995	Surgical Technologist Externship II .....	276
<b>Total for Surgical Technologist Certificate .....</b>		<b>1326</b>

For additional information regarding the Surgical Technologist Certificate Program, please contact the Center for Training and Development Office at 520-206-5100. More information can be found at <http://pima.edu/programs-courses/career-training-programs/surgical-technology/index.html>.

# Selected Policies, Governance and Faculty





## Selected Board Policies

The following policies address the College's compliance with a variety of federal anti-discrimination laws. The College makes every effort to resolve the complaints of persons who feel they have been discriminated against.

For questions concerning the College's Affirmative Action/Equal Opportunity and Harassment policies, the College's unlawful discrimination complaint process, or the College's Americans with Disabilities Act (ADA) process, contact EEO/AA/ADA Office at Pima Community College District Office, 4905C, East Broadway Blvd., Tucson, AZ 85709-1310, 520-206-4539. Confidentiality will be practiced on a need-to-know basis.

### Equal Employment Opportunity/ Affirmative Action

Pima Community College is committed to the principles of equal employment opportunity and affirmative action. The College prohibits discrimination in the terms and conditions of employment based on race, color, national origin, religion, sex, age, disability, veteran status, sexual orientation, gender identity or any other basis protected by law. Our affirmative action program identifies specific recruiting needs in an effort to increase the representation of minorities, women, individuals with disabilities and protected veterans in our institution. Employees and applicants shall not be subjected to retaliation because they have filed a complaint, participated in an investigation or opposed any unlawful practice.

#### Anti-Harassment

The College is committed to providing a work and educational environment that is free from harassment. Harassment based on an individual's race, color, national origin, religion, sex including sexual harassment, age, disability, veteran status, sexual orientation, gender identify or any other basis protected by law is prohibited. All employees and students are expected to abide by this policy. Retaliation against any member of the College community for reporting harassment, filing an internal or external complaint, or participating in an investigation is strictly prohibited.

#### Title IX

"No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity receiving Federal financial assistance." Title IX of the Educational Amendments of 1972; 34 CFR Part 106

Pima Community College is committed to providing a safe and positive learning and working environment that is free from discrimination on the basis of sex, including sexual harassment and sexual violence. The following people have been designated to handle inquiries regarding Title IX policies and procedures:

#### EO/Deputy Title IX Coordinator

4905 E. Broadway, D108, Tucson, AZ 85709 520-206-4539  
Email: #EEO-ALL@pima.edu

#### Title IX Coordinator

4905 E. Broadway, B204, Tucson, AZ 85709 520-206-4973  
Email: Title9@pima.edu

### Americans with Disabilities Act (ADA)

It is the policy of Pima Community College to comply with the ADA and Section 504 of Rehabilitation Act of 1972. No qualified person will, because of disability, be denied employment, access to, participation in, or the benefits of any program, activity or service offered by the College. The College will make every effort to ensure that qualified individuals with a disability are provided a reasonable accommodation; and the College will promote respect for and equal treatment of individuals with disabilities. For public and employee requests for accommodations, or questions concerning the College discrimination complaint process, contact the College ADA Coordinator at 520-206-4539, #EEO-ALL@pima.edu or 4905 E. Broadway Blvd., D108, Tucson AZ 85709.

## Pima County Community College District Governing Board

	<b>Term Expires</b>
<b>Mark Hanna</b>	District 1, Dec. 2020
<b>Demion Clinco</b>	District 2, Dec. 2022
<b>Sylvia M. Lee, Ph.D.</b>	District 3, Dec. 2018
<b>Meredith Hay, Ph.D.</b>	District 4, Dec. 2022
<b>Luis Gonzales</b>	District 5, Dec. 2018

## College District Administrators

### District Office

#### Office of the Chancellor

##### Lee D. Lambert, Chancellor

B.A. The Evergreen State College; J.D. Seattle University

##### Jeffrey S. Silvyn, College General Counsel

B.A. Johns Hopkins University; J.D. University of California, Los Angeles

##### Esperanza G. Duarte, Special Assistant to the Chancellor (Acting)

B.A. University of Arizona

#### Office of the Provost and Executive Vice Chancellor for Academic and Student Services

##### Dr. Dolores Durán-Cerda, Provost and Executive Vice Chancellor for Academic and Student Services (Acting)

B.A. University of Iowa; M.A., Ph.D. University of Arizona

##### Julian Easter, Assistant Vice Chancellor for Academic Affairs

B.A. University of Notre Dame; M.S. Pittsburg State University

##### Dr. Karrie Mitchell, Assistant Vice Chancellor for Enrollment Management Student Affairs

B.S. Northern Arizona University; M.S. Kansas State University;  
Ph.D. University of Arizona

##### Bruce Moses, Assistant Vice Chancellor for Accreditation and Quality Improvement

B.B.A, B.S., M.A. Eastern Michigan University

**Dr. Nicola Richmond, Assistant Vice Chancellor for Institutional Research, Planning and Effectiveness**

B.S. University of Southampton (England); Ph.D. University College London (England)

**Melissa Moser, Executive Director of Financial Aid and Title IV Compliance**

B.S. Golden Gate University; M.B.A. Webster University

**Vacant, Assistant Vice Chancellor for Academic and Student Services Certification and Development****Office of the Vice Chancellor for External Relations****Lisa Brosky, Vice Chancellor for External Relations**

B.A. Eastern Kentucky University; M.A. The Ohio State University

**Libby Howell, Executive Director of Media, Community and Government Relations**

B.A. Adams State College

**Office of the Executive Vice Chancellor for Finance, Administration and Information Technology****Dr. David W. Bea, Executive Vice Chancellor for Finance and Administration**

B.A. Colgate University; M.A., Ph.D. Claremont Graduate University

**Terrance Quest, Assistant Vice Chancellor for Finance**

B.B.A. University of Toledo; M.B.A. Western International University

**Dr. Raj Murthy, Assistant Vice Chancellor for Information Technology**

M.S., Ph.D. Indiana University of Pennsylvania

**Office of the Chief Human Resources Officer****Daniel Berryman, Vice Chancellor for Human Resources**

B.A. University of California; M.A. Pepperdine University

**Alison Colter-Mack, Assistant Vice Chancellor for Human Resources**

B.S. Park University; M.A. Northern Arizona University

**Office of the Vice Chancellor for Facilities****Bill Ward, Vice Chancellor for Facilities**

A.A. St. Petersburg College; B.S. Indiana State University

**Christopher Albers, Executive Director of the Department of Public Safety**

B.A., M.A. Biola University

**Community Campus****Dr. Lorraine Morales, Campus President**

B.S. Western New Mexico University; M.A. University of Arizona; Ed.D. Northern Arizona University

**Michael Amick, Vice President of Distance Learning**

B.S. Moorhead State University; M.A. Minnesota State University Moorhead

**Dr. Irene Robles-Lopez, Vice President of Student Affairs, Academic Advising and Retention**

B.I.S. University of Texas – El Paso; M.C. University of Phoenix; Ph.D. University of Arizona

**Dr. Ian Roark, Vice President of Workforce Development**

B.Mus. Angelo State University; M.Ed. University of Texas at Permian Basin; Ed.D. University of Texas at San Antonio

**Dr. Janice Kempster, Dean of Distance Learning**

B.S. Lewis Clark State College; M.A. Northern Arizona University; Ph.D. Colorado State University

**Amanda Abens, Dean of Workforce Development and Continuing Education**

B.A. University of Arizona; M.C. University of Phoenix

**Regina Suitt, Vice President of Adult Basic Education for College and Career**

B.A. Iowa State University; M.Ed. Northern Arizona University

**Desert Vista Campus****Dr. Morgan Phillips, Campus President**

A.A.S. Blue Ridge Community College; A.A. Brevard Community College; B.S., M.S. University of Central Florida; Ed.D. University of Florida

**Ted A. Roush, Campus Vice President**

B.S. United States Air Force Academy; M.S. Boston University

**Brian Stewart, Dean of Education and Student Affairs**

B.F.A., B.N, M.S. University of Arizona

**Dr. Jeff Thies, Dean of Developmental Education**

B.A. Arizona State University; M.A. Northern Arizona University; Ph.D. University of Arizona

**Downtown Campus****Dr. David Doré, Campus President**

B.A. Gannon University; M.Ed. Boston College; Ph.L. Gonzaga University; M.B.A. Georgetown University; M.T.S. Santa Clara University; Ed.D. Pepperdine University

**Dr. Lamata Mitchell, Vice President of Instruction and Academic Operations**

B.A. Trent University; M.A. Loughborough University; M.A. Andrews University; Ph.D. Northern Illinois University

**Yira Brimage, Vice President of Student Affairs and Engagement**

B.A. Arizona State University; M.Ed. Northern Arizona University

**Dr. Kristina Beckman, Dean of Communications (Acting)**

B.S., M.A., Ph.D. Colorado State University at Fort Collins; M.Ed. Northern Arizona University

**Gregory J. Wilson II, Dean of Applied Technology**

B.A. University of Virginia; M.Div. Duke University

**East Campus****Dr. Lorraine Morales, Campus President**

B.S. Western New Mexico University; M.A. University of Arizona; Ed.D. Northern Arizona University



**Dr. Darla Zirbes, Campus Vice President**

A.A. Bismarck State College; B.S. Moorhead State University; M.Ed. Northern Arizona University; Ph.D. University of Arizona

**Dr. Mary Beth Ginter, Dean of Business**

B.S. Oakland University; M.A. Eastern Michigan University; Ph.D. University of Arizona

**Dr. Suzanne Desjardin, Dean of Social Sciences and Student Affairs**

A.A. Pima Community College; B.A. University of Arizona; M.C. University of Phoenix; M.A. Arizona State University; Ph.D. University of Arizona

**Northwest Campus****Dr. David Doré, Campus President**

B.A. Gannon University; M.Ed. Boston College; Ph.L. Gonzaga University; M.B.A. Georgetown University; M.T.S. Santa Clara University; Ed.D. Pepperdine University

**Dr. Aubrey Conover, Campus Vice President**

B.A. University of Wisconsin, Madison; M.A., Ph.D. University of Arizona

**Nina Corson, Dean of Mathematics and Student Affairs**

B.S. Stephen F. Austin State University; M.A. University of Arizona

**Emily Halvorson-Otts, Dean of Sciences (Acting)**

B.S. Fort Lewis College; M.A. University of Arizona

**West Campus****Dr. Morgan Phillips, Campus President**

A.A.S. Blue Ridge Community College; A.A. Brevard Community College; B.S., M.S. University of Central Florida; Ed.D. University of Florida

**Dr. Gregory Busch, Vice President of Instruction and Transfer Pathways**

B.S. Xavier University; M.S., Ed.D. West Virginia University

**Dr. Ricardo Castro-Salazar, Vice President for International Development**

B.S.B.A. Instituto Tecnológico de Sonora; M.A. University of Arizona, M.A. University of Amsterdam; M.Ed. Universidad La Salle–Mexico City; Ed.D. University of Durham-England

**Dr. Thomas Nevill, Dean of Arts and Humanities**

B.M. Eastern Illinois University; M.A., D.M.A. University of Nevada Las Vegas

**James Craig, Dean of Allied Health Division**

B.S., M.B.A. University of Arizona

**Dr. Joseph Gaw, Dean of Nursing**

B.S.N., M.S.N., Ed.D. Grand Canyon University

**Edgar Soto, Dean of Athletics, Fitness and Wellness**

B.A. University of New Mexico; M.Ed. Northern Arizona University

**Dr. M. Ann Parker, Vice President for Student Transitions**

B.A. Davidson College; M.Ed. University of Nebraska-Lincoln; M.A., Ph.D. University of Arizona

**Emeritus Status**

The Governing Board confers Emeritus status on distinguished individuals, retired from the College, to signify honor and respect for outstanding accomplishments and contributions to the College over many years. This distinction is a tribute to the special relationship that will extend well into the future as the College periodically calls upon the services of these highly regarded colleagues for the benefit of the College community. Faculty and administrators receiving such an award exemplify the characteristics of ideal community college educators who, through their professional careers at Pima Community College, have contributed significantly to disciplines or services, professional organizations, their campuses, the District Office, the College district, and the community.

- James E. Gibson, Ed.D., Provost Emeritus 1991
- Edward M. Duperret, M.Ed., Faculty Emeritus 1992
- Leland H. Scott, Ph.D., Faculty Emeritus 1992
- Henry “Hank” Oyama, M.Ed., Vice President Emeritus 1992
- Robert Longoni, M.A., Faculty Emeritus 1993
- Jamie Trainer, M.S., Faculty Emerita 1993
- Constance Howard, M.S., Dean Emerita 1993
- Johnas F. Hockaday, Ph.D., Chancellor Emeritus 1995
- Max Jules Gottschalk, B.A., Faculty Emeritus 1999
- Robert D. Jensen, Ed.D., Chancellor Emeritus 2003
- Angela Zerdavis, Ed.D., President and Faculty Emerita 2004
- Miguel A. Palacios, Ph.D., President Emeritus 2004
- Philip J. Silvers, Ph.D., Assistant Vice Chancellor Emeritus 2004
- Arthur Alberding, Ph.D., Faculty Emeritus 2005
- Gun Elisabet Bailey, M.A., Faculty Emeritus 2015
- Guadalupe Castillo, M.A., Faculty Emeritus 2015
- Anne Franklin, M.A., Faculty Emeritus 2015
- Richard Fridena, Ph.D., Faculty Emeritus 2015
- Margaret Fried, M.A., Faculty Emeritus 2015
- Mary Kay Gilliland, Ph.D., Faculty Emeritus 2015
- Jo Ann Little, M.Ed., Faculty Emeritus 2015
- Nancy Wall, M.A., Faculty Emeritus 2015
- George Welch, M.S., Faculty Emeritus 2015
- Paul Welsh, Ph.D., Faculty Emeritus 2015
- Charles A. Land, M.Ed., Faculty Emeritus, 2016
- David V. Stephen, Ph.D., Faculty Emeritus 2016

**Distinguished Staff Status**

The Governing Board confers Distinguished status on retired College staff to signify honor and respect for outstanding accomplishments and contributions to the College over many years. Staff members receiving such an award exemplify the characteristics of the ideal community college. Through their professional careers at Pima Community College, these distinguished individuals have contributed significantly to their areas of service, professional organizations, their campuses, the District Office, the College district, and the community.

- Emily McMillin, 1996
- Harold Thompson, 1996

## Pima Community College Faculty

**Dr. Darla J. Aguilar, Mathematics (1999)**

B.S.Ed. Montana State University; M.A., Ed.D. University of Arizona

**Dr. Eric Aldrich, Writing (2014)**

B.A. Assumption College; M.A. Arizona State University

**Jacqueline Allen, Counselor (2013)**

B.A., M.Ed. University of Arizona

**Dean C. Anderson, Administration of Justice Studies (2016)**

B.A. California State University; M.A. Naval Postgraduate School; J.D. George Mason University

**Carmen Amavizca, Writing (1999)**

B.S.Ed., M.Ed., University of Arizona

**Brooke Anderson, Reading and Writing (2007)**

B.A., M.S. California State University

**Michele Anderson, Mathematics (2008)**

B.S., M.S. University of Wyoming

**Emilia Andujo, Dental Hygiene Education (1991)**

A.A. Rio Hondo Community College; A.S. Cerritos Community College; B.S. California State University-Long Beach; M.S. California State University-Los Angeles

**Jean Arbogast, Mathematics (2008)**

B.A. California State University; M.S., M.S. University of Wyoming

**Dr. Alexandra Armstrong, Biology (2014)**

B.S. Northern Arizona University; Ph.D. University of Arizona

**Max R. Atwell, Dental Lab Technology (2002)**

A.A.S. Pima Community College; B.S.Ed. Northern Arizona University

**Mark Backes, Machine Tool Technology (2004)**

Certificates Rock Valley College, U.S. Department of Labor

**Dr. Maha Baddar, Writing (2007)**

B.A. Alexandria University; M.A. University of Massachusetts; Ph.D. University of Arizona

**Dr. Hema Bandaranayake, Biology (2009)**

B.S. University of Peradeniya; Ph.D. University of Maryland

**John Barrowman, Aviation Technology (2013)**

B.S. University of Phoenix

**Yuko Bautista, Nursing (2010)**

B.S., M.N., M.B.A. University of Phoenix

**Charles Becker, Librarian (1999)**

B.A. George Mason University; M.A. University of Arizona

**Dr. Kristina Beckman, Writing (2008)**

B.S., M.A., Ph.D. Colorado State University at Fort Collins; M.Ed. Northern Arizona University

**Sandra M. Bejarano, Biology (1993)**

B.S. University of Arizona; M.Ed. Northern Arizona University

**Bruce Bessette, Aviation (2009)**

A.A.S. Eastern New Mexico University

**Kenneth J. Bice, Welding (2005)**

B.A. University of Arizona

**Matej Boguszak, Mathematics (2009)**

B.S., M.A. University of Arizona

**Joseph M. Brewer, Librarian (2005)**

B.A. University of Arizona; B.S. University of New Mexico; M.L.S. University of Arizona

**Dr. Katherine L. Broneck, Business (2005)**

B.A. University of Illinois; M.A., Ph.D. University of Arizona

**Theresa A. Brown, Computer Software Applications (2000)**

A.A.S. Spokane Community College; B.A., B.A. Eastern Washington University; M.A. University of Arizona

**Galen Brubaker, Building & Construction Technology (1997)**

A.S. Community College of the Air Force; B.S. Wayland Baptist University; M.S. Troy State University

**Margaret Buck-Rodriguez, Reading (2003)**

B.S. Lesley University; M.A. University of Arizona

**Ellyn E. Bulikowski, Nursing (1991)**

B.S.N. University of Massachusetts; M.N. Emory University

**Kent R. Burbank, Social Services (2015)**

B.S. University of North Dakota; M.A. University of Chicago; M.D.V. Meadville-Lombard Theological

**April Burge, Writing (2008)**

B.A. Northwest Missouri State University; M.A. Northern Arizona University

**Dr. Lonnie D. Burke, Chemistry (2006)**

A.A. Orange Coast College; B.S., Ph.D. University of California-Irvine

**Dr. Christopher M. Cabello, Chemistry (2013)**

B.S. University of Arizona; M.S. University of Michigan; Ph.D. University of Arizona

**Dr. Teresa Campbell, Business (1998)**

B.S.B.A., M.S., Ph.D. University of Arizona

**Dr. Olga Carranza, Psychology (2006)**

A.A. San Bernardino Valley College; B.A. University of California, Riverside; M.A. California State University, San Bernardino; Ph.D. University of California, Santa Barbara

**Mariana Carreras, Art and Art History (2004)**

A.A. Miami-Dade Community College; B.A., M.F.A. George Washington University

**Roman A. Carrillo, Automotive Technology (2011)**

A.A.S. Pima Community College

**Roberta L. Casper, Mathematics (1999)**

A.S. Pima Community College; B.S., B.S., M.Ed. University of Arizona

**Mary E. Cassidy, Counselor (2015)**

B.A. University of Arizona; M.A. University of Phoenix

**Dr. Nancy G. Christie, Psychology (1993)**

B.A., M.S., Ph.D. University of Arizona

**Carol Christofferson, Music (2006)**

B.M., M.M. University of Arizona

**Joshua Cochran, Writing (2008)**

B.A. University of Arizona; M.F.A. City College of New York

**Rebecca Cohen, Special Education (2009)**

B.A. University of Pittsburgh; M.A. University of Arizona

- J. Scott Collins, Mathematics (1994)**  
B.S., M.S. Virginia Polytechnic Institute
- Dr. Gary A. Cooper, Chemistry (2012)**  
B.A., M.S., Ph.D. Arizona State University
- Barbara Cortes, Counselor (2002)**  
B.S.Ed. Northern Arizona University; M.A. Chapman University
- Dr. Mayra E. Cortes-Torres, Spanish (2006)**  
B.A. University of Wisconsin; M.A. Arizona State University; Ph.D. University of New Mexico
- Rosanne Couston, Librarian (2009)**  
B.F.A., M.A. University of Arizona
- Janet Coyne, Nursing (2010)**  
B.S. Saint Joseph's College; M.S. The Sage College
- Dr. Amy Cramer, Business and Economics (2002)**  
B.A., M.A., Ph.D. University of Massachusetts
- Dr. Guadalupe A. Cruikshank, Spanish (2001)**  
B.A., M.A. University of Arizona; Ph.D. University of Arizona
- Dr. Timothy Cruz, Biology (2013)**  
B.S. Stanford University; D.M. University of California
- Carmen E. Cueva, Computer Aided Drafting (2010)**  
B.Arch. University of Arizona
- Robert F. Cunningham, Counselor (2012)**  
B.A., M.S. University of California, Long Beach
- Lynn M. Cushing, Radiologic Technology (2015)**  
A.A.S. Pima Community College
- Deborah Cutler, Spanish (2014)**  
B.A. Siena College; M.S.Ed. The City University of New York - Queens College
- Ryan W. Daily, Counselor (2015)**  
B.A. Lake Forest College; M.A. Northern Arizona University
- Joseph Dal Pra, Art (2008)**  
B.F.A. College of Mount Saint Joseph; M.F.A. University of Cincinnati
- Amy Davis, Counselor (2007)**  
B.A., Arizona State University; M.A. Northern Arizona University
- Dr. James De La Rosa, Biology (1994)**  
B.S. University of Southern California; M.S., Ph.D. Cornell University
- Susan Jo Deering, Nursing (1985)**  
B.S.N. Lake Superior State College; M.S. University of Arizona
- James Delaune, Computer Information Systems (2002)**  
B.S., M.B.A. University of Florida
- Francisco O. Delgado-Duran, Biology (1990)**  
B.S. University of Chihuahua; M.S. University of Arizona
- Mic R. Denfeld, Writing (1992)**  
A.A. Southeast Iowa Area Community College; B.A. Iowa Wesleyan College; M.A. Iowa State University
- Kathryn Di Piero, Nursing (2008)**  
B.S.N. University of Wisconsin-Milwaukee; M.S.N. Marquette University College of Nursing
- Edward Doran, Counselor (2010)**  
B.A. University of Arizona; M.Ed. Northern Arizona University
- Shelly Dorsey, Writing (2002)**  
B.A., M.A. University of Arizona; M.A. University of Canterbury at Kent
- Amy Drewek, Sign Language (2014)**  
B.S.Ed. University of Arizona; M.A. Gallaudet University
- Dino L. Dreyfus, Nursing (2012)**  
B.S.N. Colegio de San Agustin – Bacalod; M.S.N. University of Saint La Salle
- Kimlisa S. Duchicela, History (2004)**  
A.A. San Diego City College; B.A., M.A. San Diego State University
- Dr. Jody Lee Duek, Biology (2001)**  
B.S. University of Houston; M.A.Ed. California State University at Northridge; Ph.D. University of California-Los Angeles
- Matthias K. Duwel, Art (2005)**  
M.F.A., Hochschule der Kunste
- Dr. Joel E. Dworin, Reading (2012)**  
B.A.Ed., M.Ed., Ph.D. University of Arizona
- Dr. Margaret Eagleton, Education (2014)**  
B.A. Lewis and Clark College; Ph.D. University of Arizona
- Erin S. Eichelberger, Sign Language (2006)**  
B.S.Ed. University of Pennsylvania; M.A. University of Arizona
- Barbara E. Elgutaa, Counselor (2000)**  
B.S. University of Wisconsin-Stevens Point; M.S. University of Wisconsin-Madison
- Erika E. Elias, Counselor (2013)**  
B.A. University of Arizona; M.Ed. Northern Arizona University
- John J. Evans, Computer Information Systems (2000)**  
B.S., Wayne State University
- Dr. Ronald J. Evans, Computer Information Systems (2001)**  
B.S., M.S., M.S.E., Ph.D. Purdue University
- Dr. Noah Fay, Geology (2004)**  
B.S. Eastern Michigan University; Ph.D. University of Oregon
- Melania Federico, Counselor (2010)**  
B.S. University of Arizona; M.Ed. Northern Arizona University
- Julia B. Fiello, Biology (1994)**  
B.A. Oberlin College; M.A. University of Arizona
- Patricia Figueroa, Spanish (2005)**  
B.A. University of Arizona; M.A. New York University
- Carolyn Fike, English as a Second Language (2008)**  
B.A. Michigan State University; M.S. Eastern Michigan University
- Paul A. Flasch, Mathematics (1994)**  
B.S. St. John's University; M.S. North Dakota State University
- Andrea Foege, Writing (2003)**  
B.A. Vassar College; M.A. New Mexico State University; M.F.A. Arizona State University
- Colleen M. Ford, Nursing (2015)**  
B.A. Cedar Crest College; M.S. Grand Canyon University
- Robert Foth, Mathematics (2008)**  
B.S. California State University; M.S. University of Nebraska

**Kathy Fraychineaud, Sign Language (2002)**

A.A.S. Rochester Institute of Technology; B.S.E.E.T. Northeastern University; M.A. University of Arizona

**Dr. Jeffrey Gabbitas, Translation Studies (2009)**

B.A., M.A. Brigham Young University; Ph.D. University of Arizona

**Duff C. Galda, Education (1997)**

A.A. Glendale Community College; B.S., M.Ed., M.Ed. Northern Arizona University

**Joy Gall, Dental Hygiene (2007)**

Certificate, Dental Hygiene, University of Texas Health Science Center; B.S. University of the Incarnate Word; M.B.A. Midwestern State University

**Dr. Nancy Gamboian, Fitness and Sports Science (2014)**

B.S. State University of New York at Fredonia; M.F.A. University of North Carolina; Ph.D. University of Oregon

**Patricia A. Gardiner, Digital Arts (2000)**

A.A.S. Pima Community College; B.F.A. University of Arizona

**John Gerard, Building and Construction Technology (2014)**

B.F.A. University of Arizona

**Simone Gers, Writing (1998)**

B.A., M.A. University of Houston-Clear Lake

**Lynne Gillette, Physics (2014)**

B.S. Towson University; M.S. Iowa State University

**Mirjana Glisovic-Bensa, Mathematics (2012)**

B.S., M.S. Northern Arizona University

**Bryan C. Goldkuhl, Automotive Technology (2012)**

Master Automotive Technician - National Institute for Automotive Service Excellence; Provisional Career and Technical Educational Industrial Technician Certificate - Arizona Department of Education

**Margaret S. Golston, Writing (2012)**

B.A., M.F.A. University of Arizona

**Dr. Linda Gail Gonzales, Psychology (1999)**

B.A. Southwest Texas State University; M.A., Ph.D. University of Texas

**Gwen Gorbette, Paralegal (2016)**

B.S.P.A., J.D. University of Arizona

**Dr. Eugene W. Gotwalt, Economics (2010)**

B.A., B.A. Millersville University; M.A, Ph.D. George Mason University

**Monica L. Gouker, Nursing (2015)**

A.S. Tulsa Community College; B.S.N. Langston University; M.S. Grand Canyon University

**Dr. Julia V. Gousseva, Writing (2001)**

B.A. Moscow State Linguistic University; M.A., Ph.D. University of Arizona

**Andrea Graham, Writing (2010)**

B.A., M. TESL, M.A. Arizona State University

**Elena Grajeda, Spanish (1999)**

B.A.Ed., M.A.Ed. University of Arizona

**Stephen Grede, Computer Aided Drafting (2007)**

Bachelor of Landscape Architecture, University of Arizona

**Dr. Mischala Grill, Biology (2008)**

B.S. Pennsylvania State University; Ph.D. University of Arizona

**Jennifer Guajardo, Mathematics (2009)**

B.S. University of Texas; M.S. University of Utah

**Ann Haber, Biology (2002)**

B.S. Purdue University; M.S. University of Arizona

**Dr. Wayne L. Hacker, Mathematics (2004)**

A.A. Florissant Valley Community College; A.B. Washington University; M.A. St. Louis University; M.S., Ph.D. University of Arizona

**Stacey L. Hackett, Counselor (2015)**

B.S. University of Arizona; M.A. University of Phoenix

**Emily M. Halvorson, Chemistry (2005)**

B.S. Fort Lewis College; M.A. University of Arizona

**Nancy W. Hamadou, English as a Second Language (1997)**

B.A. Indiana State University; M.A. Ohio University

**Dr. Chien-Wei Han, Technology Education (2002)**

B.S. California Institute of Technology; M.S. Carnegie Mellon University; M.S., Ph.D. University of Arizona

**Virginia Harmelink, Early Childhood Education (2008)**

B.S, M.A. University of Wyoming

**Erika Hartle-Shutte, Veterinary Technology (2015)**

B.A. University of Colorado; D.V.M. Colorado State University

**Makyla M. Hays, Mathematics (2011)**

B.S. Grand Canyon University; M.A. University of Arizona

**Dr. Shawn I. Hellman, Writing (2005)**

B.S., M.A., Ph.D. University of Arizona

**Mark R. Heywood, Aviation Technology (2000)**

A.A.S. Pima Community College

**Perry Higgins, Counselor (1996)**

B.S. United States Naval Academy; M.A. California State University-Dominguez Hills; M.Ed. Northern Arizona University

**Dr. Manuel M. Hinojosa, Writing (2005)**

B.A. St. Edward's University; M.A. University of Rhode Island; Ph.D. University of Arizona

**Lisa-Anne R. Hodgkins, Librarian (2013)**

B.A. University of Illinois; M.L.S. University of Maryland

**Olivia J. Holt, Nursing (2017)**

A.A.S. Eastern Arizona College; B.S.N., M.S.N. Grand Canyon University

**Dr. Lazaro M. Hong, Technology Education (2000)**

B.S., M.A. University of Southern California; Ph.D. University of Arizona

**Cynthia M. Howe, English as a Second Language (2005)**

B.A., M.A. University of Washington

**Dr. Carolina Ibanez-Murphy, Spanish (1998)**

B.S. Marywood College; B.A. Western Michigan University; M.A., Ph.D. University of Arizona

**Dr. Mays Imad, Biology (2013)**

B.A. University of Michigan; Ph.D. Wayne State University

**Helen M. Infanti, Psychology (2012)**

B.A. University of Colorado, Boulder; M.A. University of Arizona

**Barry T. Infuso, Culinary Arts (2000)**

A.A. Foothill College; B.A. University of California- Berkeley

- Dr. Francisca James-Hernandez, Anthropology (1998)**  
A.B., A.M., Ph.D. Stanford University
- Ana Jimenez, Mathematics (2003)**  
A.G.S. Pima Community College; B.S., M.Ed. University of Arizona
- Dr. Thomas T. Jordan, Biology (1999)**  
B.A. State University of New York; D.C. Western States Chiropractic College
- Dr. Lisa A. Jurkowitz, English as a Second Language (2001)**  
B.A., M.A., Ph.D. University of Arizona
- Dr. Mana Kariman, Computer Software Applications (2015)**  
B.S., M.S., Ed.D. Western Kentucky University
- Kathy Karlberg, Nursing (2015)**  
B.S.N. Northern Arizona University; M.S. Grand Canyon University
- Jennifer B. Katcher, Biology (2001)**  
B.A. University of Arizona; M.S. University of California-Davis
- Debra Kaye, Accounting (2008)**  
B.A., M.B.A. University of Arizona
- Dr. Jacqueline D. Kern, Nursing (2012)**  
B.S.N., M.S., Ph.D. University of Arizona
- Vivian J. Knight, Accounting (2015)**  
A.A.S. Pima Community College; B.S.B.A., M.A.C.C. University of Arizona
- Dr. Silvia Kolchens, Chemistry (1995)**  
B.S., M.S., Ph.D. University of Cologne
- Andrea R. Kooshian, English as a Second Language (2005)**  
B.A. University of Arizona; M.A. Northern Arizona University
- Dr. Timothy M. Krone, Veterinary Technology (2011)**  
D.V.M. Michigan State University
- Susan Kuklin, Librarian (2007)**  
B.A. University of Arizona; M.L.S. Indiana University; J.D. University of Arizona
- Dennis C. Landry, Digital Arts (1999)**  
Undergraduate Courses, University of Arizona
- William J. Lang, English as a Second Language (2005)**  
B.S. Fontbonne College; M.A. City University of Hong Kong
- Patrick J. Lawless, Building & Construction Technology (2011)**  
B.A. State University of New York; M.S. Long Island University
- Rita L. Lennon, Massage Therapy (2016)**  
A.S. Pima Medical Institute
- Luis A. León, Mathematics (2005)**  
B.A. University of Arizona; M.Ed. Northern Arizona University
- Mickey Levendusky, Mathematics (1991)**  
B.A., B.A., M.A. University of Arizona
- Sandra Ley, Librarian (2009)**  
B.A. University of San Diego; M.L.I.S. San Jose State University
- Gregory J. Loumeau, Digital Arts (2013)**  
B.F.A. University of Arizona
- Sylvia M. Loustaunau, Counselor (2013)**  
B.A. University of Arizona; M.Ed. Northern Arizona University
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Microsoft Office User Special (MOUS) Certifications at Expert Level  
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