

PIMA COMMUNITY COLLEGE  
2016-2017  
CATALOG

PEOPLE *Integrity*  
Excellence  
COLLABORATION  
*Open Admissions*  
& OPEN ACCESS



PimaCountyCommunityCollegeDistrict



# PimaCommunityCollegeCatalog 2016-2017

## 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 620 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 class schedules are available class schedules on the College website 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: June 2016

### Pima County Community College District Board of Governors



District 1  
Mark Hanna,  
*Chair*



District 2  
Demion Clinco



District 3  
Dr. Sylvia Lee,



District 4  
Scott A. Stewart



District 5  
Martha Durkin,  
*Secretary*



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 2016-2017 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 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.

A handwritten signature in black ink, appearing to read "Lee D. Lambert". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Lee D. Lambert  
Chancellor

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# Academic Calendar

## Fall Semester 2016

Faculty advising begins.....	Aug. 17
All College Day in-service (College closed).....	Aug. 19
<b>Fall classes begin</b> (for 16-week classes).....	Aug. 24
‡ First 8-week session begins.....	Aug. 24
Registration deadline (for 16-week classes).....	Aug. 23-28
<i>(Between Aug. 23-28: Students can register up until the day before the first meeting of a 16-week course.)</i>	
Labor Day holiday (College closed).....	Sept. 5
Drop/Refund/Audit deadline (for 16-week classes).....	Sept. 6
Graduation Application deadline.....	Oct. 14
First 8-week session ends.....	Oct. 18
‡ Second 8-week session begins.....	Oct. 19
Student Withdrawal deadline (for 16-week classes).....	Nov. 9
Veterans Day holiday (College closed).....	Nov. 11
Thanksgiving holiday (College closed).....	Nov. 24-27
Final exam week.....	Dec. 12-18
<b>Fall classes end</b> (for 16-week classes).....	Dec. 18
Second 8-week session ends.....	Dec. 18
Holiday break (College offices closed).....	Dec. 23–Jan. 2
<i>(College closed at noon on Dec. 23)</i>	

## Spring Semester 2017

College offices open.....	Jan. 3
Faculty advising begins.....	Jan. 10
All Faculty Day.....	Jan. 11
Martin Luther King Jr. holiday (College closed).....	Jan. 16
Registration deadline for 16-week classes.....	Jan. 16-22
<i>(Between Jan. 16 - 22: Students can register up until the day before the first meeting of a 16-week course.)</i>	
<b>Spring classes begin</b> (for 16-week classes).....	Jan. 17
‡ First 8-week session begins.....	Jan. 17
Drop/Refund/Audit deadline (for 16-week classes).....	Jan. 30
Graduation Application deadline.....	Feb. 22
**Rodeo holiday (College closed).....	Feb. 23-24
First 8-week session ends.....	March 12
Spring break (no classes).....	March 13-19
‡ Second 8-week session begins.....	March 20
Student Withdrawal deadline (for 16-week classes).....	April 6
Final exam week.....	May 10-16
Second 8-week session ends.....	May 14
<b>Spring classes end</b> (for 16-week classes).....	May 16
Graduation.....	May 18

## Summer Sessions 2017

Memorial Day holiday (College closed).....	May 29
Graduation Application Deadline.....	June 30
Independence Day (College closed).....	July 4

### Session A

Registration deadline.....	May 29
Classes begin.....	May 30
Drop/Refund/Audit deadline.....	June 2
Student Withdrawal deadline.....	June 21
Classes end.....	July 3

### Session B

Registration deadline.....	July 4
Classes begin.....	July 5
Drop/Refund/Audit deadline.....	July 10
Student Withdrawal deadline.....	July 27
Classes end.....	Aug. 8

### Session C

Registration deadline.....	May 29
Classes begin.....	May 30
Drop/Refund/Audit deadline.....	June 5
Student Withdrawal deadline	
• 8-week session.....	July 7
• 10-week session.....	July 17
Classes end	
• 8-week session.....	July 25
• 10-week session.....	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 2017 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 College is on Notice. Notice means that the College is now in compliance with the HLC's Criteria for Accreditation, but remains at risk of being out of compliance with the Criteria for Accreditation and the Core Components. 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 mission 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 13,000 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 16,000 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 10,000 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 8,000 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 45,000 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

### 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

### 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

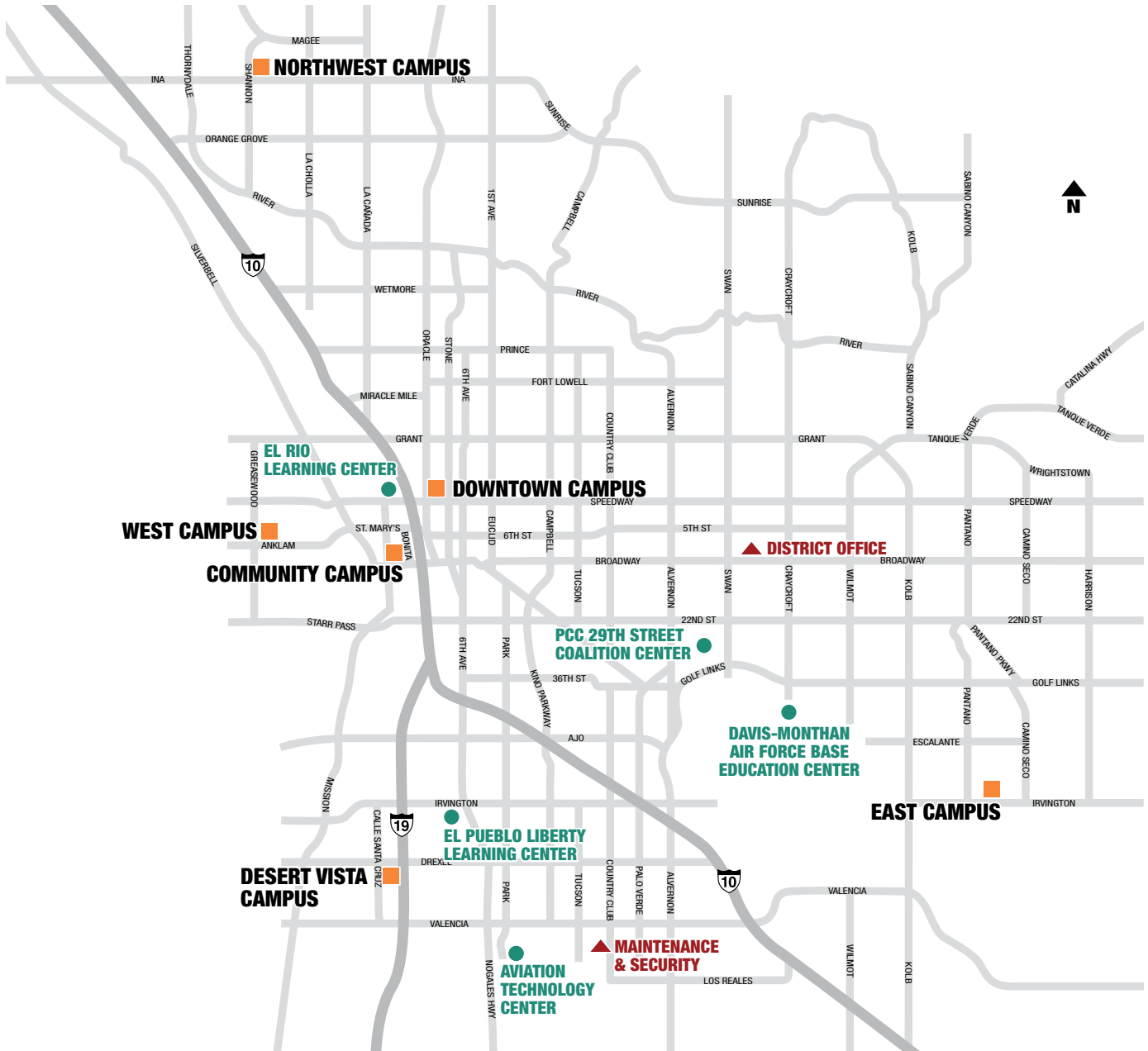
### Public Safety and Emergency Services Institute - 29th Street Coalition Center

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. Community Campus offers flexible degree and certificate programs and services, including fully online and hybrid options and online advising and tutoring, to meet every need.

Community Campus services include development and delivery of classes and programs in a variety of modes and locations in support of college-wide programs and initiatives. The Community Campus has been serving students since 1975, offering credit and noncredit classes at its campus location (401 N. Bonita Avenue) and at more than 100 facilities throughout southern Arizona.

Community Campus is the lead campus for PimaOnline, the College's distance education program. PimaOnline supports all distance education services for the College, including online registration, advising, online tutoring and technical support. Additionally, PimaOnline houses fully online programs such as the AGECE A and B, the Human Resource Management certificate as well as many fully online courses to serve students locally, nationally and worldwide.

PimaOnline students range from those who take all of their courses online to those who take some face-to-face and some online. This increased flexibility helps students manage the demands of busy schedules and increase their ability to complete degrees at the College.

The Adult Basic Education for College and Career (ABECC) division is managed at Community Campus and provides adult learners who are 16 and older with opportunities to increase basic skills, prepare to earn a High School Equivalency (HSE) Diploma, take the GED® test, learn English, increase their civic involvement, study concurrently in adult basic education classes and occupational certificate programs, and develop the readiness skills necessary to transition to further education, jobs, and vocational training. ABECC classes are free to students and are located throughout Pima County. Classes and services are located at PCC campuses, several community sites and three large urban learning centers: El Pueblo Liberty Adult Learning Center, El Rio Adult Learning

Center and the 29th Street Coalition Center. ABECC also coordinates High School Equivalency Testing, the Test for Adult Basic Education (TABE), as well as other occupational certification exams. Additional programs and services include: Citizenship preparation classes, Bridge classes, Integrated Basic Education and Skills Training (IBEST) programs, Civics and Student Leadership, AmeriCorps and the Refugee Education Program. Classes are taught by certified, adult educators in classrooms, computer labs, and with hybrid and distance modalities. In addition, students receive student services, tutoring, and basic literacy services.

The Center for Learning Technology (CLT) is home to the College's PCCTV cable television station, broadcast-quality video production facilities, distance education course development and delivery center.

The College's Workforce Development and Continuing Education division provides comprehensive, cost-effective training options for individual workers, as well as for businesses, organizations and governmental agencies. Workforce Development and Continuing Education offers traditional or customized credit, training and continuing education unit (CEU) courses to meet the needs of regional employers. These courses may be offered in person or online, at a location and at times convenient for the client. The Associate of Applied Science Business and Industry Technology (AAS-BIT) degree may include industry certifications ranging from A+ and Net+ to Cisco, leadership or supervision, as well as customized courses and certificates developed in industry-specific disciplines on a contractual basis.

Finally, the Workforce Development and Continuing Education division works closely with Pima County to assist students in receiving Workforce Investment Act funding for classes. The College has a strong partnership with Arizona@Work, with employees on site to assist displaced workers, veterans, youth and unemployed persons with their training and educational needs.

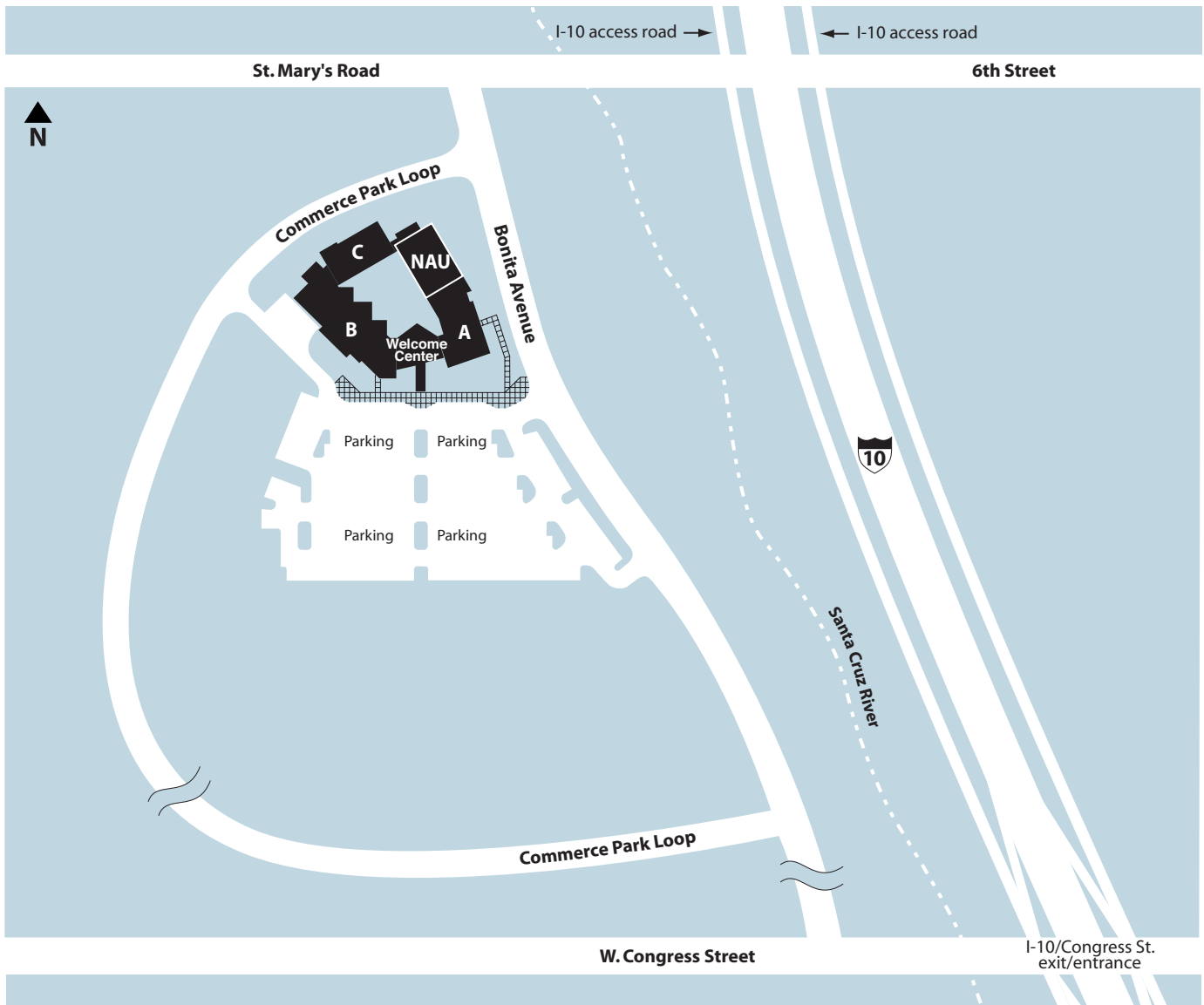
Continuing Education programs and services include noncredit general interest classes, programs for active adults, Ed2Go online courses, Pima for Kids classes (for children ages 5-12), Teen Scene classes (for teenagers and young adults), workshops and seminars.

The Public Safety and Emergency Services Institute (PSESI) offers open enrollment courses, and also partners with public and private agencies, to provide associate degrees and certificates in law enforcement, fire science, corrections, juvenile corrections, crime scene management and emergency medical technology.

The Arizona Prison Program contracts with appropriate federal and state agencies to provide business and occupational training programs for inmates. Educational training for incarcerated populations has shown to improve recidivism rates.

The Truck Driver Training Program offers students the opportunity to receive Class A Commercial Driver's license, or a Class B Commercial Driver's license with a passenger endorsement. These licenses and/or endorsements allow for direct employment in the nation's trucking and busing industry. Learn the basic knowledge and over-the-road skills needed for direct employment as an entry-level driver trainee or co-driver.

Community Campus facilities also house 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:

- Center for Learning Technology
- Conference and Training Center
- High School Equivalency & Certification Testing
- High Tech Training Rooms
- Small Business Development Center
- Workforce Development and Continuing Education

### 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).

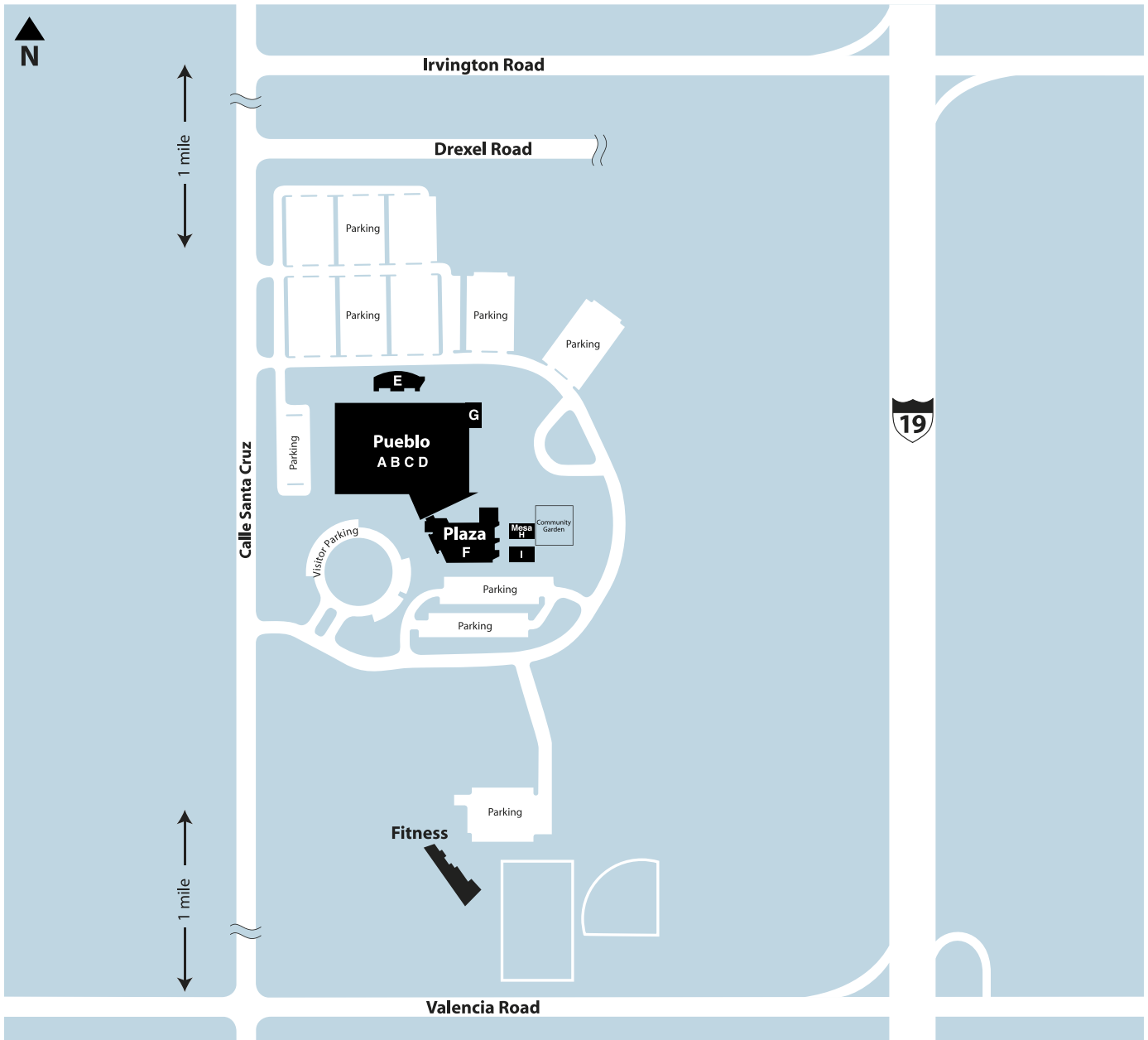
Desert Vista Campus serves about 7,000 students a year, offering a wide range of courses and programs, including university transfer, developmental, occupational, workforce and general education. A variety of courses are offered in mathematics, the sciences (biology, chemistry, astronomy and physics), languages (Spanish and English as a Second Language), and a rich cultural arts curriculum. 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. Other signature programs are Culinary Arts, Child Development, Early Childhood Education and Teacher Education. The Center for Training and Development (CTD) offers many noncredit 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.

Services that support student success include a comprehensive Learning Center that integrates tutoring, Adult Basic Education, group and individual study areas, and workshops designed to help students reach their educational goals. The campus also has a vibrant Student Life program and a Cyber Café in a central loca-

tion where students can easily access the Internet in a relaxed environment. In addition, the library and computer commons serves students, faculty, college employees and the community with a welcoming atmosphere and versatile student space. Desert Vista 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.

Vision High School, a charter school that mainstreams dually enrolled high school students into the community college environment, is housed at the campus. 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

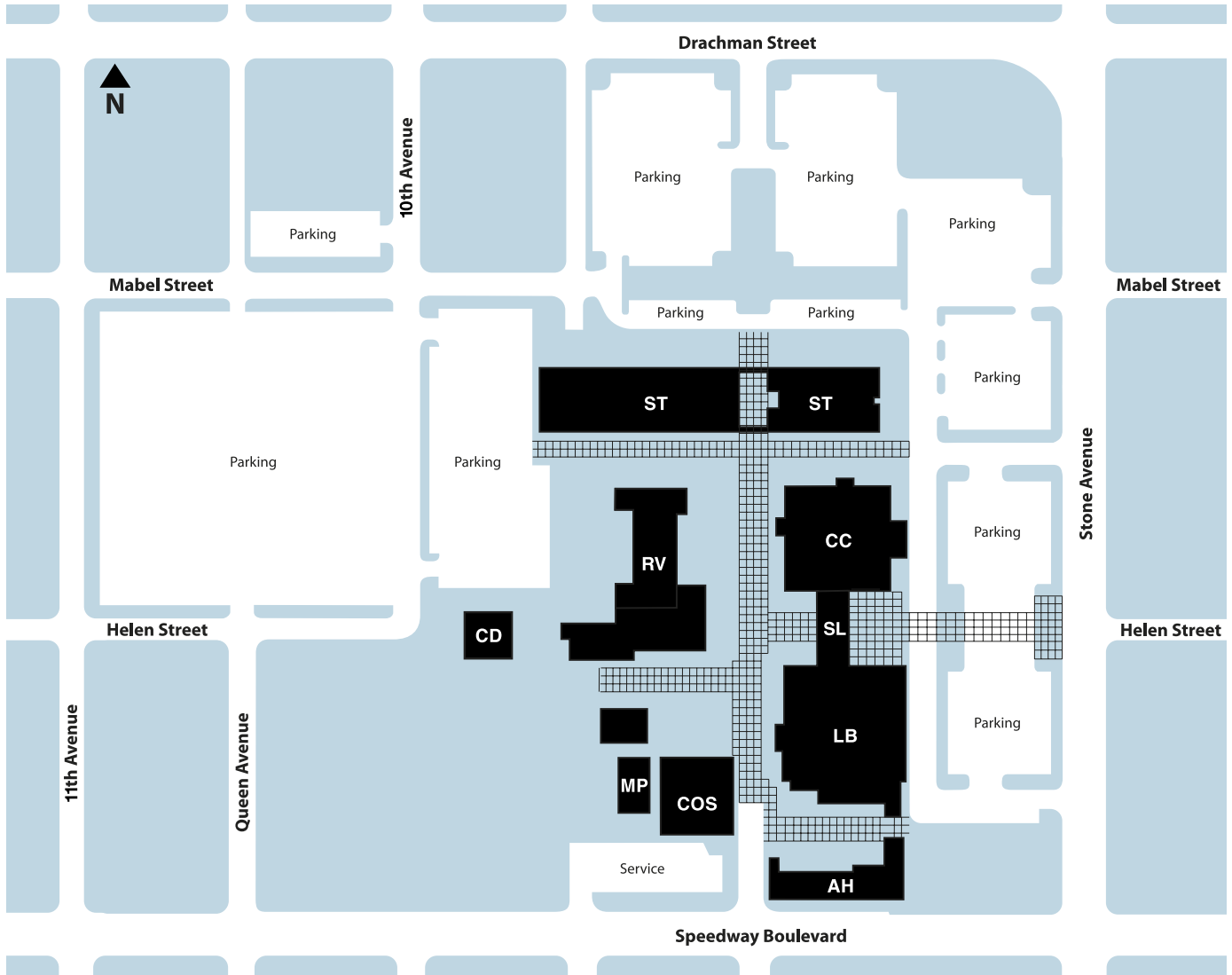
Since its inception in 1974, the Downtown Campus has offered a variety of opportunities for students to enhance their personal, academic and professional lives. Just minutes from the University of Arizona, the Ronstadt Transit Center and the heart of downtown Tucson, the campus serves about 13,000 students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

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  
Curriculum  
Faculty Offices  
Gemstone Café  
Media Services  
Science & Communication Arts Division Office  
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)

Automotive Technology  
Biology Lab

Building and Construction Technologies

Business, Occupational and Professional

Programs Division Office

CAD Lab

Classrooms

Computer Classroom

Facilities Technology

Faculty Offices

Interior Design

Machine Tool Technology

Welding Technology

### Student Link (SL)

Student Services

Admissions

Advising

Financial Aid

Registration

Welcome Center





## East Campus

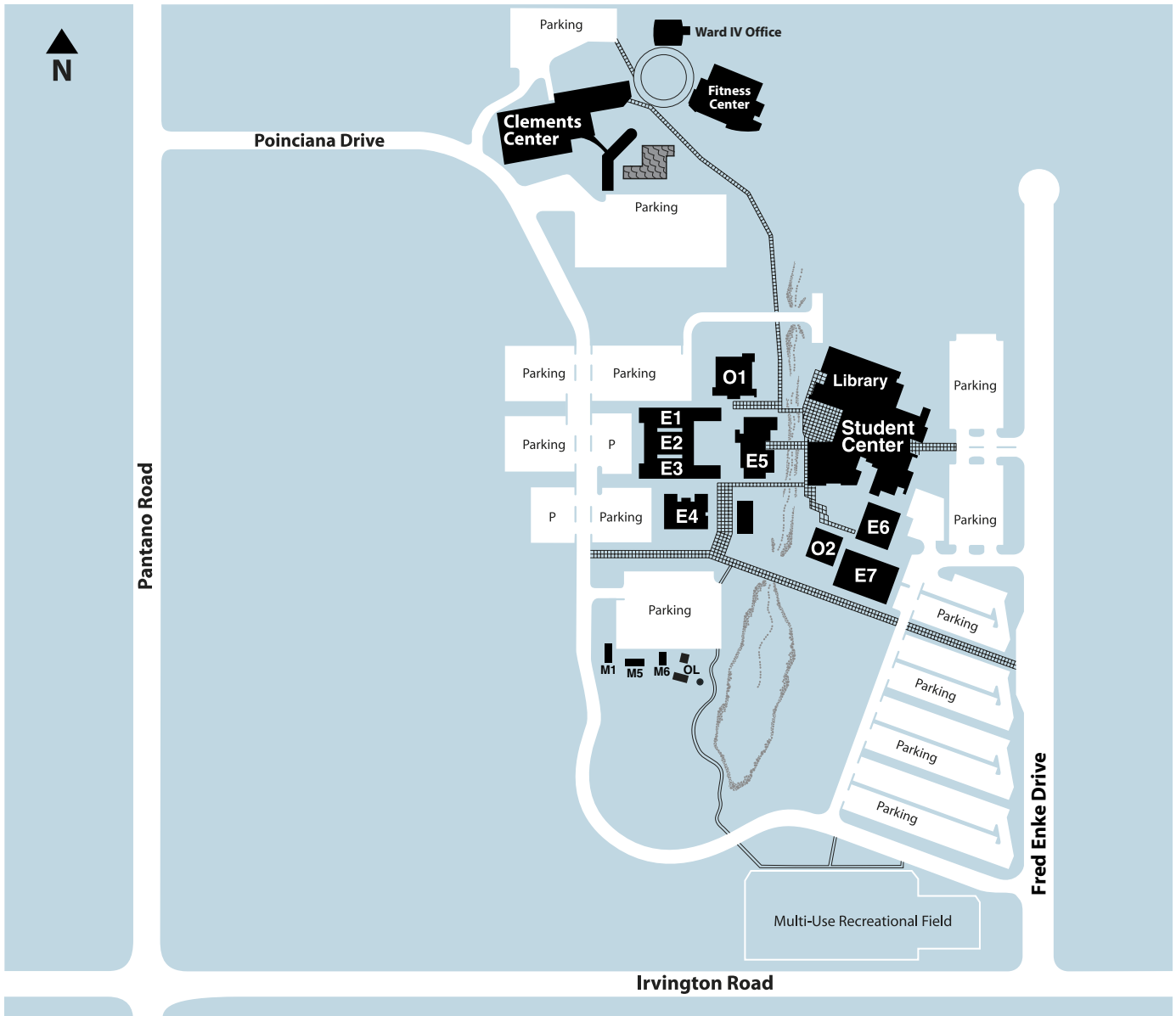
In 1976, the College established the East Education Center, which became East Campus in 1980. Four subsequent expansions now have given the residents of Tucson's East Side a comprehensive and convenient full-service campus that offers general education, university transfer, developmental coursework and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

The campus enrolls more than 10,000 students annually. The campus houses a Health Clinic used by the public as well as students. A dynamic Student Life office provides East Campus students with a wide variety of opportunities to enhance their personal success. Student Government is highly active, and student clubs are diverse and engaged in campus and community activities.

In addition to a full array of academic and transfer programming, the campus provides vocational training in the areas of Emergency Medical Technology, Pharmacy Technology, Logistics and Supply Chain Management, Veterinary Technology, and Administration of Justice Studies. For the convenience of students, the campus offers classes at Davis-Monthan Air Force Base. The College also has a partnership with University of Arizona South to offer classes.

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 new 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
- Level 3**
  - Adjunct Faculty Resource Room
  - 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 Student Development
- Level 2 (Promenade)**
  - Assistive Technology
  - Campus Resource Center
  - Computer Commons
  - Tutoring/Group Study Rooms

- Level 3**
  - Group Study Rooms
  - Library
  - Sign Language Lab
  - Technology Classroom

### Building C

- Level 2 (Promenade)**
  - Bookstore
  - Café
- Level 3**
  - Academic Dean
  - Conference Rooms
  - 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

- Upward Bound

### 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 Allied Health Professions programs that include an associate degree in Nursing, Dental Studies, Radiologic Technology, Respiratory Therapy and Medical Lab Technician. The Nursing and Respiratory Therapy programs have state-of-the-art classrooms and simulation labs. In fall 2011, the West Campus received a five-year U.S. Department of Education Title III HSI STEM (science, technology, engineering, mathematics) grant totaling \$4.3 million. The grant will strengthen STEM curriculum, modernize science laboratories, and increase the number of transfer students who pursue bachelor's degrees in STEM programs.

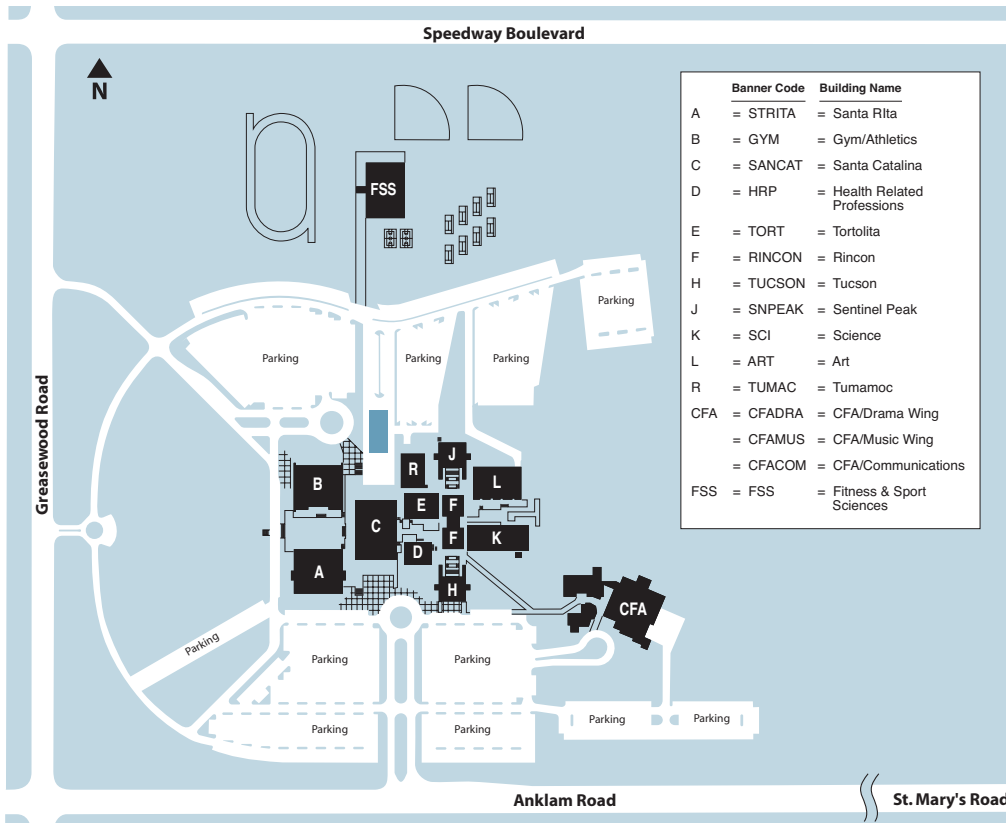
The West Campus also provides outstanding programs in Fashion Design, Journalism and the Visual and Performing Arts. The campus is known for its state-of-the-art Digital Arts program that offers cutting edge curriculum in computer animation, game design, digital design, illustration, film video, multi-media, 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 campus also hosts the nationally known Creative Writing Weekend Workshops in spring and fall.

The West Campus enrolls approximately 15,000 students annually. The campus has 142 faculty members, 286 adjunct faculty and 112 staff. The campus is organized around four instructional divisions that offer a wide variety of associate degrees and certificate programs. 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 provides a home to 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 includes 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  
Executive Director of Athletics  
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 educational interests. No person shall 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.

Please note that 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

Truck and Bus/Transit 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 below 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](http://www.pima.edu).

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 in 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 as required by the Center for International Education and Global Engagement.

- b. A completed Affidavit of Support, along with a bank statement or bank certification, verifying availability of funds in the amount required by the Center for International Education and Global Engagement.
  - c. Student must be covered by health insurance. 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 as required by the Center for International Education and Global Engagement.
    - b. A copy of the current I-94, either from the applicant's passport or the United States Department of Homeland Security website.

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 non-immigrant 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 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 semes-

ter, 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- or 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 benefits eligibility. Declaring a program of study will help you clarify your academic goals and will increase your 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

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

- Be admitted to Pima Community College
- Request that a translated transcript from the institution(s) previously attended be sent to the 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 of the credits at any campus Student Services Center. Pima Community College will consider evaluated international transcripts for elective credit. Evaluations will be considered when performed by a partner company of the

American Association of Collegiate Registrars & Admissions Officers (AACRAO) or members of the National Association of Credential Evaluation Services (NACES).

### **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. For information about the Department of Veterans Affairs (DVA) educational assistance, please see the Financial Assistance section.

### **General Education Mobile (GEM)**

Pima Community College is a General Education Mobile (GEM) participating institution. GEM allows active-duty Air Force students the opportunity 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**

Successfully 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' 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 – Proficiency Exam**

A proficiency 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). Proficiency exams are offered under limited circumstances at the instructor's discretion. Contact the instructor for permission to take a proficiency exam before registering for the course. A student must register and pay for the course before completing the exam. The instructor usually will require the successful completion of the course's final exam, which may have a written and/or oral component.

#### **Challenge/Proficiency Exams**

Other exams allow you to bypass lower-level courses to accelerate your progress toward earning your degree or certificate. For these tests you do not need to register or pay for the course, nor will you earn college credit if you pass the exam.

These examinations are offered in Biology, Chemistry and World language classes. Learn more about each of these tests on the College Assessment Center website.

### **Advanced Placement (AP) and International Baccalaureate (IB) Programs**

Pima Community College accepts Advanced Placement (AP) and International Baccalaureate Diploma (IB) credits. Taking Advanced Placement or International Baccalaureate courses in 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 or IB 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. Contact a Pima Community College advisor to confirm course credit toward specific programs.

Advanced Placement classes are offered in select high schools. Exams are administered through the College Board each May. Some students take AP exams after taking honors or accelerated courses in their schools. For more information about the AP program, visit the College Board website, [www.collegeboard.com](http://www.collegeboard.com).

The International Baccalaureate Diploma Programme also is offered in select high schools. This rigorous two-year course of pre-university studies leads to exams that can be used to qualify for college credit. Pima Community College accepts certain higher-level IB exams for credit, see the following IB table. For more information about the IB Program, visit the main website for IB Diploma Programme, [www.ibo.org/programmes/diploma-programme](http://www.ibo.org/programmes/diploma-programme).

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

Please refer to the following table for the required scores for General Education application or Course Credit awarded. These scores are reviewed annually by the College Curriculum Office and by the respective College Discipline Area Committees.

## 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, 201, 202	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	LAT 101 & 102	8
<b>Music Theory</b>	4 or 5	Humanities & Fine Arts - Fine Arts	MUS 125 & 127	5
<b>Physics</b>				
Physics 1 - Mechanics	4 or 5	Biological and Physical Sciences	PHY 121IN	5
Physics 2 - Electricity & Magnetism	4 or 5	Biological and Physical Sciences	PHY 122IN	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

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

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC Credit
<b>Spanish Literature</b>	5	Other Requirements—Second Language	SPA 101, 102, 201, 202 & 251	19
	4	Other Requirements—Second Language	SPA 101, 102, 201 & 202	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 ZTR SB**	6

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

\*\* ZTR HU or ZTR SB awards credit toward either AGECEC Humanities and Fine Arts - Humanities or AGECEC 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</b>	5, 6 or 7	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 141 & 142	6
<b>Biology</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</b>	5, 6 or 7	None	ZTR ELEC*	3
<b>Chemistry</b>	5	Biological and Physical Sciences	CHM 151IN & 152IN	10
	4	Biological and Physical Sciences	CHM 151IN	5
<b>Classical Languages: Latin</b>	4, 5, 6 or 7	Other Requirements - Second Language	LAT 101 & 102	8
<b>Computer Science</b>	5, 6 or 7	None	CIS 279	5
<b>East, Southeast Asian and Oceania History</b>	5, 6 or 7	None	ZTR ELEC*	6
<b>Economics</b>	5, 6 or 7	Social and Behavioral Sciences	ECN 201 & 202	6
<b>English A</b>	5, 6 or 7	English Composition	WRT 101	3
	4	None	ZTR ELEC*	3
<b>European History</b>	5, 6 or 7	Humanities and Fine Arts—Humanities OR Social and Behavioral Sciences	HIS 101 & 102	6
<b>Geography</b>	5, 6 or 7	Social and Behavioral Sciences	GEO 103	3
<b>Islamic History</b>	5, 6 or 7	Humanities and Fine Arts - Humanities	ZTR HU*	3
<b>Mathematics- Higher Level (H)</b>	5, 6 or 7	Mathematics	MAT 220	5
<b>Modern Languages: French</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</b>	5, 6 or 7	Other Requirements - Second Language	GER 201 & 202	8
	4	Other Requirements - Second Language	GER 101 & 102	8
<b>Modern Languages: Spanish</b>	5, 6 or 7	Other Requirements - Second Language	SPA 201 & 202	8
	4	Other Requirements - Second Language	SPA 101 & 102	8
<b>Music</b>	5, 6 or 7	Humanities and Fine Arts - Humanities OR Fine Arts	MUS 201 & 202	6
<b>Physics</b>	6 or 7	Biological and Physical Sciences	PHY 121IN & 122IN	10
	5	Biological and Physical Sciences	PHY 121IN	5
<b>Psychology</b>	6 or 7	Social and Behavioral Sciences	PSY 101	4
<b>Social and Cultural Anthropology</b>	4	Social and Behavioral Sciences	ANT 102	3
<b>Visual Arts</b>	5, 6 or 7	Humanities and Fine Arts - Fine Arts	ART 110 & ART 115	6
	4	Humanities and Fine Arts - Fine Arts	ART 115	3

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

## College-Level Examination Program (CLEP)

The College-Level Examination Program is a means by which students can obtain college credits without having to enroll formally in the courses. Pima Community College accepts CLEP 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 scores with the University of Arizona's CLEP scores.

CLEP credit may fulfill Arizona General Education (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 are recorded with a "P" grade and will not be stated in a specific course grade. No record is made of failing scores.

Please refer to the following table for the required scores for General Education application or Course Credit awarded. These scores are reviewed annually by the College Curriculum Office and by the respective College Discipline Area Committees.

### 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>	50	Humanities and Fine Arts - Humanities OR Social and Behavioral Sciences	HIS 141	3
<b>History of the United States II: 1865 to Present:</b>	50	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
<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	3



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

Exam Title	Exam Score	PCC General Education Category	PCC Course Equivalency	PCC 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 AGEC Humanities and Fine Arts - Humanities.

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

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

### DANTES CLEP and DSST

DANTES (Defense Activity for Non-Traditional Education Support) offers two forms of standardized assessment: DANTES CLEP and DANTES DSST (DANTES Subject Standardized Tests). DANTES CLEP is the same as CLEP and, utilizing the CLEP scores and equivalencies identified in the CLEP section of this catalog, may be applied to any certificate or degree. DANTES DSSTs are subject-matter examinations in college and technical subjects. At this time, the College does not accept DANTES DSST examinations as equivalent to College courses.

## 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. The Student Success & Registration 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 date of 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 the general information line (520-206-4500)

## Maximum Credit Hours Per Semester

To promote student success and retention, a limit will be placed on 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 the summer session. 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 son or daughter;

-Inform parents if their student (who is under age 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 Emergency

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 officials, 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 (SEVIS)

FERPA permits PCC to comply with information requests from the 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

If you would like to challenge your grade, you must do so through a formal process. Please refer to [www.pima.edu/current-students/complaint-processes/grade-related-complaints.html](http://www.pima.edu/current-students/complaint-processes/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 three 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.
- A ‘W’ may also be used for incomplete module work that must be moved from one academic year to the next.

## Standards of Academic Progress

*This policy is under review and may change after the catalog is submitted. For the most current information, go to [www.pima.edu/new-students/register-for-classes/academic-progress.html](http://www.pima.edu/new-students/register-for-classes/academic-progress.html).*

### Good Academic Standing

To have Good Academic Standing, you must have:

- Completed 20 semester credit hours with a cumulative grade point average (GPA) of at least 2.00; or
- Attempted 36 semester credit hours and had a completion rate of 67 percent, or 24 semester hours completed with a passing grade.

Attempted Credits:

- Withdrawals and incomplete grades and repeated courses that are excluded are considered attempted credits;
- Repeated courses with a grade that is the same as or lower than a prior attempt are considered attempted but not completed credit.

You are strongly encouraged to seek assistance from a counselor if you have not completed 20 semester credits and have a cumulative grade point average (GPA) of less than 2.00.

### Academic Probation

If a student fails to meet the standards established for Good Academic Standing, they will be placed on Academic Probation. Academic Probation status indicates that the institution is seriously concerned about the student’s academic progress. A student on academic probation will:

- Be notified via MyPima announcement or College email that they are being placed on Academic Probation.
- Attend an Academic Probation Workshop or STU 100, 102, 121 or 150 course found in the online class schedule. To register for a workshop, log into MyPima, click on Students, select Academics, Under Quick Links, select Academic Probation Workshop link, select date, time, and campus you would like to attend and click on register icon at bottom of the page, complete the form and submit. Bring the Probation Workshop materials with you to the workshop.
- Not be able to register until the workshop or course has been completed. After successful completion of the workshop or course, a student will be allowed to register for future semesters.
- Have their academic progress monitored each semester until Good Academic Standing is regained.

### Academic Restriction

You will be placed on Academic Restriction if you:

- Completed 40 semester hours with a cumulative GPA of less than 2.00; or
- Attempted 56 semester hours with a completion rate of less than 67 percent

When placed on Academic Restriction you will:

- Be notified via MyPima announcement or College email of your Academic Restricted status;
- Be restricted to enrolling in no more than 12 hours in the next semester (without prior approval);
- Have your ability to register blocked at this time.

You must:

- Meet with a counselor to complete additional requirements; or register in and successfully complete STU 112 course.

### Academic Disqualification

If you are on Academic Restriction you will be allowed to continue if you:

- Obtain a GPA of at least 2.00; and
- Complete 67 percent or more of your courses for the next semester.

Students on Academic Restriction who do not maintain good academic standing will be Academically Disqualified.

Students who are Academically Disqualified will be dropped from enrollment in the next traditional semester. After the next traditional semester, students will be placed on Academic Restriction status until they regain Academic Good Standing.

Students wishing to appeal their Disqualification status must meet with a counselor to begin the process. The eligible grounds for an appeal are limited and will be accepted only after the summer or fall semesters. See a PCC counselor for deadlines and additional information.

### Academic Fresh Start

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, please see a PCC counselor or if you are a veteran, a veteran advisor at any campus Student Services Center.

## Financial Aid and Veterans Education Benefits Recipients Academic Standing

Students receiving financial aid and/or Veterans Education Benefits should be aware that there are additional and separate policies and requirements regarding their Academic Standing. Information is available at [www.pima.edu/paying-for-school/financial-aid/](http://www.pima.edu/paying-for-school/financial-aid/)

[satisfactory-progress/index.html](https://www.pima.edu/paying-for-school/veterans-benefits/satisfactory-academic-progress/index.html). Veteran Benefit Recipient SAP information can be found at [www.pima.edu/paying-for-school/veterans-benefits/satisfactory-academic-progress/index.html](https://www.pima.edu/paying-for-school/veterans-benefits/satisfactory-academic-progress/index.html).

### Satisfactory Academic Progress for International Students

Schools are required by the U.S. Immigration and Customs Enforcement/U.S. Department of Homeland Security 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. Withdraws, 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 that they are being placed on warning and registration will be 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 that they are being placed on probation and registration will be 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 be:
  - a. Notified via PCC email that they are being placed on Disqualification;
  - b. No longer 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 will be tracking credit class attendance and notifying students if their attendance record might jeopardize their success, aid and/or benefits. It is important to be aware that the College is required to make adjustments in Veteran's 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 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 her or his roster and your 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 ten days or more, 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 on your 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 Refreshers
- **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 is an excel form that calculates hours offered, hours attended, and hours absent. It also records leave 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 absences 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 circumstance.
  - 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 Pima College'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 possible College Board of Governors.

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 Agency sponsored for students with sponsoring agencies.
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. A 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 Leave of Absence is requested by a student due to unforeseen barriers that prevent them from completing training and have a reasonable expectation of the student's return.
2. A Leave of Absence must be requested in advanced by the student utilizing a Leave of Absence Form which includes the reason for the Leave of Absence.
  - 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 and the student Students must also sign the FA acknowledgement if they are receiving federal financial aid so students 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 time limit of 180 days in 12 months includes all repeated hours and includes 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 determined to be Approved or Unapproved for federal financial purposes according to federal financial aid guidelines.
9. Students not on financial aid still 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 2016, Spring 2017 and Summer 2017 (all sessions) terms. The tuition you pay is determined by whether you are an in-state resident or a nonresident and whether the courses you take are 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 2016, Spring 2017, and Summer 2017

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	\$78.50	\$102.00	\$110.00
2	\$157.00	\$204.00	\$220.00
3	\$235.50	\$306.00	\$330.00
4	\$314.00	\$408.00	\$440.00
5	\$392.50	\$510.00	\$550.00
6	\$471.00	\$612.00	\$660.00
7	\$549.50	\$714.00	\$770.00
8	\$628.00	\$816.00	\$880.00
9	\$706.50	\$918.00	\$990.00
10	\$785.00	\$1,020.00	\$1,100.00
11	\$863.50	\$1,122.00	\$1,210.00
12	\$942.00	\$1,224.00	\$1,320.00
13	\$1,020.50	\$1,326.00	\$1,430.00
14	\$1,099.00	\$1,428.00	\$1,540.00
15	\$1,177.50	\$1,530.00	\$1,650.00
16	\$1,177.50	\$1,553.50	\$1,681.50
17	\$1,177.50	\$1,577.00	\$1,713.00
18	\$1,177.50	\$1,600.50	\$1,744.50
19	\$1,177.50	\$1,624.00	\$1,776.00
20	\$1,177.50	\$1,647.50	\$1,807.50
21	\$1,177.50	\$1,671.00	\$1,839.00
22	\$1,177.50	\$1,694.50	\$1,870.50

Credit Hours	General Tuition	Differential Tuition A*	Differential Tuition B**
23	\$1,177.50	\$1,718.00	\$1,902.00
24	\$1,177.50	\$1,741.50	\$1,933.50
25	\$1,177.50	\$1,765.00	\$1,965.00
26	\$1,177.50	\$1,788.50	\$1,996.50
27	\$1,177.50	\$1,812.00	\$2,028.00
28	\$1,177.50	\$1,835.50	\$2,059.50
29	\$1,177.50	\$1,859.00	\$2,091.00
30	\$1,177.50	\$1,882.50	\$2,122.50

High school dual enrollment classes are not charged differential tuition.

\* Beginning July 1, 2015 Differential Tuition A is assessed for courses in Automotive Technology, AUT; Aviation Technology, AVM; Computer Aided Drafting, CAD/DES; Clinical Research, CRC/CTC; Dental Assisting Education, DAE; Interior Design, IDE; Law Enforcement Academy, LEA; Massage Therapy, TMA; Medical Laboratory Technology, MLT; Music Studio Instruction, MUP; Radiologic Technology, RAD; Respiratory Therapy, RTH; Welding, WLD. MLT 110 (crosslisted with BIO 110), will be charged general tuition rates.

\*\* Beginning July 1, 2015 Differential Tuition B is assessed for courses in Dental Hygiene, DHE; Dental Lab Technology, DLT; Nursing, NRS; Technology, TEC; Truck Driver Training, TDT.



## Center for Training and Development (CTD) Cost Breakdown 2016-2017

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)	HSE Practical Nurse Exam	Program Total
Nursing Assistant	120	\$1,336	\$75	\$150	\$26	\$70	\$206		<b>\$1,863</b>
Practical Nurse	1,350	\$16,405	\$761	\$457	\$52	\$70		\$51	<b>\$17,796</b>
Patient Care Technician (PCT)	96	\$1,089	\$54	\$125	\$26				<b>\$1,294</b>
Surgical Technology	1,326	\$16,160	\$583	\$137	\$26	\$70			<b>\$17,223*</b>
Surgical Instrument Technician	746	\$9,184	\$583	\$137	\$26	\$70			<b>\$10,000</b>
LPN Refresher	200	\$1,655	\$145						<b>\$1,800</b>
RN Refresher	240	\$1,655	\$145						<b>\$1,800</b>
Baker's Helper	900	\$10,050	\$164	\$289					<b>\$10,531</b>
Cook's Helper	705	\$7,746	\$166	\$360					<b>\$8,300</b>
Kitchen Helper	335	\$3,600	\$166	\$360					<b>\$4,154</b>
Pantry Cook	605	\$7,098	\$166	\$360					<b>\$7,652</b>
Culinary Skills Fundamentals	1,000	\$10,512	\$166	\$360					<b>\$11,196</b>
Prep Cook	900	\$10,050	\$166	\$360					<b>\$10,604</b>
Accounting Assistant	922	\$10,409	\$374						<b>\$10,783</b>
Administrative Assistant	695	\$7,839	\$765						<b>\$8,604</b>
Computer Software Applications	420	\$4,331	\$233						<b>\$4,564</b>
Keyboard Operator	80	\$830	\$136						<b>\$966</b>
Legal Office Procedures	150	\$1,468	\$240						<b>\$1,708</b>
Legal Office Support	930	\$10,484	\$609						<b>\$11,093</b>
Medical Office Clerk	120	\$1,195	\$541						<b>\$1,736</b>
Medical Office Specialist	484	\$4,915	\$578						<b>\$5,493</b>
Medical Records Technician	924	\$9,881	\$958						<b>\$10,839</b>
Medical Terminology	66	\$702	\$159						<b>\$861</b>
Office Assistant 1	370	\$2,964	\$189						<b>\$3,153</b>
Office Assistant 2	360	\$3,782	\$72						<b>\$3,854</b>
Office Assistant 1 & 2	630	\$7,246	\$261						<b>\$7,507</b>
Office Specialist	900	\$10,210	\$440						<b>\$10,650</b>
Professional Medical Coding	270	\$2,563	\$728						<b>\$3,291</b>
Quickbooks	90	\$921	\$77						<b>\$998</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

(rates subject to change)

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

## Processing Fees

Semester Processing Fee .....	\$15.00
International Student Application Fee .....	\$65.00
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
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 [studentaccountsonline@pima.edu](mailto:studentaccountsonline@pima.edu) or 520-206-4574. **For an immediate release of your financial hold you must pay your debt in person, with cash, money order or credit card. You cannot pay over the phone.**

Your debt may include the following (rates 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 in the Student Success and Registration Guide, on our website at [www.pima.edu](http://www.pima.edu), and at any campus cashier's, admissions or financial aid office. **Please Note:** If you are

unable to pay the required tuition, options such as a Payment Plan may be available to you.

**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 you will 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.
- Pima Community College Gift Certificate

## Paying Online

To pay online, login to your MyPima Account, select the Student tab, Register and Pay, and view the My Account section. Your current balance is displayed in this section. You can then 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 your 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 2016) 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 when students fail to add them.
- 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.



**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 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 an 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 a class (or classes) must be canceled by the College, 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 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 520-206-4574.

**Note:** Withdrawing from a class after the drop/refund/audit will not reduce your 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 the program 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 three 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.
- Payment made by a sponsoring agency will be returned to that agency.
- 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 the College cancels a class, you will be refunded all applicable tuition and fees.
- 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 (FSA) funds and completely withdraws from the College is required to return a percentage of those funds.

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

The College is required to perform the following 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 this same percentage to the total awarded FSA funds for which the student established eligibility before withdrawing (Total aid disbursed X 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 has to be returned and the College's share.

5. Allocate unearned aid back to the FSA 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 FSA 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 FSA funds are completely cancelled and the student is required to repay all FSA 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

Our goal is to provide all members of the community access to Pima Community College and to provide assistance for the cost of their education. 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. Even if you don't think you have financial needs, scholarships may be available. If you need help completing your FAFSA, visit any campus Student Services Center, where a Financial Aid staff member will be happy to help you.

The Fall 2016 Early Bird FAFSA Date is March 1. Students who have their FAFSA sent to PCC by this date will be considered for federal and state funds that have limited availability. Students who meet the Fall 2016 Green Check Date of April 1, 2016 by submitting their FAFSA and all requested documentation to PCC Financial Aid will receive a determination of their aid eligibility.

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 Financial 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 remains 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 their 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 it 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 Early Bird FAFSA date **of March 1**.

#### 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 Early Bird FAFSA date. FSEOG is gift-aid and does not have to be paid back if a student completes the enrollment for which they received the award.

#### 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 students' program. Funds are limited and priority consideration will be given to students who meet the College's Early Bird FAFSA 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) grant program makes grants available to students with financial need. The College determines the amount of each award based on individual need and funds are limited, so the College gives priority to students who meet the College's Early Bird FAFSA date.

#### 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 that have been donated by generous private donors to support Pima students. Scholarships may be awarded on the basis of merit, financial need or a combination of both, as well as other criteria set by the donor.

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 their scholarships will be awarded.

Applications are reviewed by the PCC Foundation Scholarship Committee composed of representatives from Pima, 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 scholarship opportunities, visit [www.pima.edu/scholarships](http://www.pima.edu/scholarships).

### 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 are required to have a minimum 2.5 GPA and demonstrate financial need.

### Pima Merit Scholars

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 display financial need and have a minimum 2.5 GPA. This scholarship can provide full or partial tuition and fees for PCC classes.

## Payment Plan

If you can't pay your tuition all at once, you can enroll in a 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 on the payment plan, please visit the Pima Community College website, [www.pima.edu/costs/paymentplan](http://www.pima.edu/costs/paymentplan).

## Department of Veterans Affairs (DVA) Educational Assistance

Pima Community College is an approved institution for Department of Veterans Affairs (DVA) educational benefits. Veterans, survivors, and dependents, eligible for DVA benefits under Title 38 of the U.S. Code (Chapters 30, 31, 32, 33 and 35), and reservists Arizona National Guard and certain Federal Reservists under Title 10, Chapter 1606 and 1607, must be certified through the PCC Veterans Services Office. Initial application to start veteran benefits (22-1990 or VONAPP) may take up to 60 days for DVA to complete. Students are encouraged to complete the required DVA procedures as early as possible through any campus Student Services Center. Students must be admitted to PCC as a degree-seeking student, submit all requested paperwork, and comply with Academic Progress Requirements for DVA Veteran Education Benefits Recipients to maintain certification status.

A student who is a veteran, a survivor or dependent of a veteran, may be eligible for veterans educational benefits. For more information on eligibility and on how to apply, contact any campus Student Services Center or the Veterans Services Office.

## Enrollment Certification and Limitations

Upon submission of a VA Certification worksheet and necessary documentation, eligible persons will be certified each semester for courses that fall within their DVA approved program. Please allow at least 30 days for electronic DVA processing. All certifications will require official transcripts from both the military and all prior educational institutions attended.

Submit your certification worksheet via your MyPima Veterans tab as soon as you register for your courses each term. If you make changes to your program or courses after submitting a certification request or change your program, you must submit an updated certification worksheet via your MyPima Veterans tab. Failure to do so will result in a delay in your certification, a delay in the receipt of your benefits, and/or an incorrect certification, resulting in an overpayment. If an over-payment occurs, you will be liable to pay funds back to the DVA.

## Benefits

Eligible persons receive Veterans educational assistance based on their enrollment status for a certified period in a given term. In a 16-week semester, this measure is determined by the following:

- Full-time: 12 or more semester credits
- Three-quarter-time: Nine to 11 semester credits
- Half-time: Six to eight semester credits

If you enroll less than half-time in a term, you will be eligible for reimbursement of tuition and college fees, only.

Veteran Education Benefit Recipients (VBRs) at above half-time status will receive a monthly benefit payment. The rate of that payment will vary by student status and chapter of eligibility. Current pay charts are available online at [www.gibill.va.gov](http://www.gibill.va.gov). As of Aug. 1, 2011, DVA will pay only in-state tuition and fees for Post 9/11 GI Bill (Chapter 33) students.

Enrollment in accelerated terms or any course that is less than 16 weeks in length, will affect the monthly rate received. Status for those enrolled in courses less than 16 weeks long will be determined by the number of credits taken in each certified period. A

certified period will be determined by the number of weeks for each course a student is enrolled in for the given term.

Enrolling in a combination of traditional and accelerated courses may cause a variance in your status; therefore, there may be a difference in the rate of payments received for each term enrolled.

DVA will not allow for the certification of open entry/open exit courses until a final grade is received and posted to the students' record. Combining open entry/open exit courses with traditional or accelerated courses directly affects your monthly entitlement and rates.

Pima Community College offers any person who is eligible for and has applied for benefits for education under the Montgomery GI bill (Chapters 30, 31, 33, 35, 1606 and 1607) deferment of payment of tuition, fees and required books and materials. Pima Community College shall defer payment for the amount of the tuition, fees and required books and materials, with no interest charge, that is due and payable at the end of the registered term. This deferment is available during any registration in which a VBR is awaiting benefits. Pima Community College VBR book loans are available at all campus bookstores. VBRs are responsible for paying the book loan upon receipt of their veteran benefits.

## Degree Plans

Students applying for DVA educational benefits can only be certified for courses that apply to their program of study (or major). Eligible students should select a program of study prior to registering for classes. Not all programs of study are approved for DVA benefits. If you have questions about your program's eligibility, email your Veteran Advisor or [veterans@pima.edu](mailto:veterans@pima.edu).

All degree programs have a set number of credits or clock hours needed to complete them. Students will not be certified for a program of study, or paid by the DVA, for courses that exceed the program's approved length. The DVA will pay only for required courses in approved programs. This same rule applies to certificate and vocational certificate programs that may be measured in clock hours rather than semester credits.

A program change may occur when a VBR changes institutions (place of training) and there is a material loss of 12 credits or more that are not transferrable to the new institution. The DVA approves and monitors the number of program changes over the period of eligibility to ensure progress in reported goals. VBRs must meet with their assigned Veteran Advisor to complete a MyDegree Plan Planner at least once a year or if any changes have been made to the your Degree Plan. The assigned Veteran Advisor will ensure that the courses the VBR is registered for align with the stated Program of Study, and the 22-1995/54-1995 that is on file with the DVA.

## Transfer of Previously Earned Credit

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 VBR may not be certified until all transcripts have been received and evaluated.

## Satisfactory Academic Progress for Veteran Benefit Recipients

Schools are required by the Department of Veterans Affairs (DVA) to have and enforce standards of academic progress for Veteran Education Benefit Recipients (VBRs) in order for their programs to be approved for VA Educational Benefit Certification. The law requires that educational assistance benefits be discontinued when a student ceases to make satisfactory progress toward completion of their training objectives.

Pima Community College VBR's will have their academic standing monitored under the following guidelines when their coursework is certified as eligible for Veteran Educational Benefits. VBR's 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 recipients. If a student has uncontrollable, unpredictable, mitigating circumstances that prevented successful course completion, he/she should discuss their situation with a PCC Veteran Services staff member. The comprehensive VBR SAP policy can found at [www.pima.edu/paying-for-school/veterans-benefits/satisfactory-academic-progress/index.html](http://www.pima.edu/paying-for-school/veterans-benefits/satisfactory-academic-progress/index.html).

## 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).

## 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 their 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 the website at [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 Pima Community College Foundation office at 520-206-4646, visit the Web page, [www.pima.edu/foundation](http://www.pima.edu/foundation) or email [foundation@pima.edu](mailto:foundation@pima.edu).

### Foundation Officers, 2016-2017

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

### PCC Foundation Board of Directors

Rosemary Badian  
 Gloria Bloomer  
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 Dennis Holden  
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 Caroline Malkin  
 Rich Moret  
 Betty Niles  
 Lesli Pintor  
 Leo Roop  
 Gary Zimnoch  
 Mark Ziska

# Student Services and Student Life

## Student Services

All student services are available at the Student Services Centers at any campus.

### Admissions/Registration

Pima Community College welcomes all who are interested in pursuing their education. Students must be admitted to the College before taking assessments, participating in an orientation or registering for classes. Admissions and registration services are available year-round online at [www.pima.edu](http://www.pima.edu) and at all 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 our website at [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.

To take the assessments, visit any campus Student Services Center. You do not need an appointment – assessments are given on a walk-in basis. 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. 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 online 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 online 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 resources and services cover career planning, résumé writing, career counseling and job search strategies and are available at any

Student Services	CC	DC	DVC	DMAFB	EC	NWC	WC	WEB
Access and Disability Resources	.	.	.	.	.	.	.	.
Admissions and Registration	.	.	.	.	.	.	.	.
Advising and/or 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**DC** = Downtown Campus**DVC** = Desert Vista Campus**DMAFB** = Davis-Monthan AFB  
Education Center**EC** = East Campus**NWC** = Northwest Campus**WC** = West Campus

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 County Community College District complies with the Americans with Disabilities Act Amendments Act (ADAAA) and Section 504 of the Rehabilitation Act of 1973 as amended, as well as other applicable federal and state laws and regulations that prohibit discrimination on the basis of disability. No otherwise qualified person will be denied access to, participation in, or the benefits of any program, activity, or service offered by the College, by reason of disability. The College endeavors to make its facilities and programming accessible to all students. This supports the success of students with disabilities, including intellectual disabilities. Campus buildings and facilities comply with ADA standards. In addition, access technologies are available on computers at campus Computer Commons, libraries and other facilities. Contact any Access and Disability Resources office for additional details.

Access and Disability Resources may assist students through the development and authorization of accommodations, academic adjustments, and /or auxiliary aids and/or through the referral of students with disabilities, including those with intellectual disabilities, to other College departments and community agencies that

can enhance and support their educational experience. When appropriate, services provided by Access and Disability Resources may include but are not limited to notetaking, sign language interpreters, real-time transcribers, video-captioning, alternative formats for textbooks and other references, assistive technology, alternative testing services and community agency referrals.

Student requests for accommodation due to disability are managed through the Access and Disability Resources offices. Access and Disability Resources specialists will determine eligibility based on appropriate documentation, and design, monitor, and adjust student accommodations through an interactive process with the student. Although students with disabilities who wish to request accommodations are encouraged to contact ADR before the semester begins, because some accommodations may take time to arrange, they may contact any Access and Disability Resources office at any time to request an accommodation. Students must request accommodations for each class, for each semester in which they would like accommodations.

The College has assistive technologies available in labs, libraries, and classrooms that assist students in succeeding in courses and completing degrees. Contact an Access and Disability Resources specialist at any campus for more information about the facilities and accommodations available for students with disabilities including intellectual disabilities. The actual provision of academic adjustments is a College-wide responsibility, and may require the assistance of instructors or other employees. Access and Disability Resources serves as a resource to College personnel, and welcomes inquiries and requests for technical assistance.

The College also does not discriminate on the basis of sex in its educational programs and activities. Absences due to medical conditions relating to pregnancy will be excused for as long as deemed medically necessary by a student's doctor and students will be given the opportunity to make up missed work. Students needing assistance can seek accommodations from the Access

and Disability Resource office at 520-206- 6688 or [ADRH@pima.edu](mailto:ADRH@pima.edu).

### **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 our website at [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 a Access and Disability Resources specialist on 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 on our website at [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 can be obtained by consulting 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. For information on all clubs, contact the campus Student Life office.

## 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. For information on these activities, consult any campus office of Student Life.

## 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 on 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 about journalism. For more information about serving on the newspaper staff in any position, please contact either the Arts and Communications Division office or Aztec Press at 520-206-6800. Pima also has a literary magazine. Students interested in this form of publishing may enroll in WRT 162-Literary Magazine Workshop. The workshop annually publishes SandScript. The SandScript 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, and the NJCAA Region #1. The sports organization governing the College's participation sets the rules of 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.

“VPSD” means the Vice President of Student Development at the College campus where an alleged Code of Conduct violation occurs, or a Vice President of Student Development 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, VPSD means the Vice President of Student Development responsible for the off-campus course or activity or a Vice President of Student Development 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 of Student Services 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. A Vice President of Student Development (VPSD) 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 VPSD 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 VPSD or College DPS Officer

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 VPSD 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

ing transcripts, or graduating until clearance has been received from a campus President or VPSD 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 VPSD determines, in the President or VPSD'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 VPSD. An incident report form may be obtained in any VPSD's office. Also an incident report form is attached. If allegations of misconduct are received by a VPSD in any written form other than on an incident report form, the VPSD shall transfer the relevant information to an incident report form. In addition, a VPSD 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 VPSD.
4. **Entry of an Incident Report and Resolution Thereof into the Code of Conduct Log:** Upon receipt or preparation of an incident report, the VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD may conduct whatever additional review of the allegations of misconduct the VPSD 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 VPSD 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 VPSD shall prepare and distribute a written decision (Review Decision) as follows:

- a. If the VPSD 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 VPSD'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 VPSD 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 the Assistant Vice Chancellor of Student Services.
- 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 VPSD'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 VPSD (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 VPSD 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 VPSD.

#### 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 VPSD, the Executive Director of Financial Aid, and the Assistant Vice Chancellor for Student Development. 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 VPSD 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 VPSD 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 VPSD 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 VPSD may, in the VPSD'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 VPSD determines that the reasons for imposing the immediate suspension no longer exist.

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

A VPSD 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 VPSD 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 Development;
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 VPSD, Campus President, the Assistant Vice Chancellor for Student Development, 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 to 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 VPSD 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) delivered personally to the student or (b) emailed to the

student's [Pima.edu](http://Pima.edu) email account. Failure of the student to collect his/her email from his/her [Pima.edu](http://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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD or President, as applicable, may exclude irrelevant, immaterial, privileged or unduly repetitious information. In addition, the VPSD 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 VPSD 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 VPSD 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 VPSD 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 VPSD 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.

## 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.

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 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, and/or meeting a specified grade point average. See Educational Programs, Degree and Certificates to determine which programs are Selective Admissions and may have additional requirements for admission.

## Program Prerequisites

Prerequisites may be required before beginning some programs. Prerequisites are in place to make sure 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 prerequisites they will be found in the program display, and the total credits required for each program include those prerequisites.

## 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. 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.
2. Complete the General Education requirements appropriate to the certificate or degree.
3. Complete the program core, support, and prerequisite requirements for the appropriate certificate or degree.
  - a. Complete a minimum of 60 credit hours of course work at the 100 level or higher for an associate degree. At least 15 credit hours of the program requirements must be earned at PCC.
  - b. Complete the college credit hours as defined in the certificate display within this catalog to earn a certificate. For certificates of more than 6 credit hours, including the AGECE-A, AGECE-B and AGECE-S, at least 6 credit hours of the program requirements must be earned at PCC. For certificates of 6 credits or less, all credits must be earned from PCC.
4. Have a minimum overall 2.0 grade point average (GPA) on a 4.0 grade point scale.
5. 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.
  - 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 (AGECE) 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 require a higher grade. 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:

1. A semester in which a student earns course credit will be counted toward continuous enrollment.
2. Noncredit courses, audited courses, failed courses, or courses from which the student withdraws do not count toward continuous enrollment.
3. 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.

The process of 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 program or certificate 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, upon request, 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:

1. Scoring 32 or above on the Compass Algebra test or the Asset Elementary Algebra test\*\*
- OR
2. Completing MAT 092 with a "C" or better\*\*
- OR
3. Completing Module 26 in MAT 089\*\*
- OR
4. 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 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.

\*\* Additional assessment options will be available once they are determined. For more information see an advisor or [www.pima.edu/programs-courses/credit-programs-degrees/gen-ed/gen-ed-non-transfer/analysis-critical-thinking.html](http://www.pima.edu/programs-courses/credit-programs-degrees/gen-ed/gen-ed-non-transfer/analysis-critical-thinking.html)

\*\*\* Neither MAT 092 nor MAT 089 apply toward the 3 credits required in this category, but do they meet 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:

1. Scoring appropriately on the Compass Algebra test or the Accuplacer Elementary Algebra test\*
- OR
2. Completing MAT 092 with a "C" or better \*\*\*
- OR
3. Completing Module 26 in MAT 089A or MAT 089B\*\*
- OR
4. 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 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.

\*\* Neither MAT 092 nor MAT 089A or MAT 089B apply toward the 6 credits required in this category, but do they meet 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† or LIT 174\*  
Any course from the AGEC Other Requirements Options: (c) Second Language list†  
One of the following conversational language courses: FRE 106\*, 107\*; SPA 106, 107, 121\*, 122\*, 206\*;  
THO 106\*, 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; 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:

AJS 165\*; 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) . . . . .	6
The combination of WRT 101 and 102 (or WRT 107 and 108).	
Humanities and Fine Arts (2 courses) . . . . .	6
One course from the Art list and one course from the Humanities/Historical Perspectives list.	
Biological & Physical Sciences (2 courses) . . . . .	8
Any two courses and their labs from the Biological & Physical Sciences list.	
Mathematics (1 course) . . . . .	3
MAT 142, MAT 151, or any MAT course above 151.	
Social & Behavioral Sciences (2 courses) . . . . .	6
Any two courses from two different prefixes in this category.	
Other Requirements (2 courses) . . . . .	6
Courses from the Other Requirement Options, and/or one additional Humanities and Fine Arts, and/or one additional Social & Behavioral Science course.	
<b>Total AGECE-A General Education Credits Required: . . . . .</b>	<b>35</b>

### AGEC-B Categorical Requirements

Minimum Credit Hours

See the Associate Degree in Business Administration (ABUS) for more information.

English Composition (2 courses) . . . . .	6
The combination of WRT 101 and 102 (or WRT 107 and 108).	
Humanities and Fine Arts (2 courses) . . . . .	6
One course from the Art list and one course from the Humanities/Historical Perspectives list.	
Biological & Physical Sciences (2 courses) . . . . .	8
Any two courses and their labs from the Biological & Physical Sciences list.	
Mathematics (1 course) . . . . .	3-5
MAT 212 or MAT 220.	
Social & Behavioral Sciences (2 courses) . . . . .	6
ECN 201 and a non-ECN course.	
Other Requirements (2 courses) . . . . .	8
CIS 120 and ECN 202.	
<b>Total AGECE-B General Education Credits Required: . . . . .</b>	<b>37-39</b>

### AGEC-S Categorical Requirements

Minimum Credit Hours

English Composition (2 courses) . . . . .	6
The combination of WRT 101 and 102 (or WRT 107 and 108).	
Humanities and Fine Arts (2 courses) . . . . .	6
One course from the Art list and one course from the Humanities/Historical Perspectives list.	
Biological & Physical Sciences . . . . .	8-10
The combination of BIO 181 & 182 and their labs, CHM 151 & 152 and their labs, or PHY 210 & 216 and their labs.	
Mathematics (1 course) . . . . .	3-5
MAT 220 or above.	
Social & Behavioral Sciences (2 courses) . . . . .	6
Two courses from two different prefixes in this category.	
Other Requirements (2 courses) . . . . .	6
MAT courses above 220 and/or Science courses from the Biological and Physical Sciences list.	
<b>Total AGECE-S General Education Credits Required: . . . . .</b>	<b>35-39</b>

### AGEC 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* WR	AGEC Transfer Writing Equivalent	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	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	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	

**Art List: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
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	
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

**Humanities List:** *(continued)*

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>AGEC Special Requirement</b>
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
LIT 260*	Major British Writers	3	I
LIT 261	Modern Literature	3	I,C,G
LIT 262	America 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 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 AGEC-A requires MAT 142, 144, 151 or above. The AGEC-B requires MAT 212 or 220. The AGEC-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 and Business SUN# BUS 2201	3	
BUS 277	Analytical Methods in Business	4	
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
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
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	
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

**AGEC Categorical Requirement: Social and Behavioral Sciences** *(continued)*

Course Number	Course Title	Credit Hours	AGEC Special Requirement
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	
FSN 154††	Nutrition	3	
Math	Any Mathematics course numbered 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	

**b) Computer Science, Critical Thinking, Logic, Mathematics or Science: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
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
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



**c) Second Language: (continued)**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>AGEC Special Requirement</b>
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:**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>AGEC Special Requirement</b>
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
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

**d) International and Multi-Cultural Studies: (continued)**

Course Number	Course Title	Credit Hours	AGEC Special Requirement
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
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

**d) International and Multi-Cultural Studies: (continued)**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>AGEC Special Requirement</b>
ZTR MCI	AGEC Multicultural Equivalent	3	I
ZTR MCC	AGEC Multicultural Equivalent	3	C
ZTR MCG	AGEC Multicultural Equivalent	3	G
ZTR MCIC	AGEC Multicultural Equivalent	3	I,C
ZTR MCIG	AGEC Multicultural Equivalent	3	I,G
ZTR MCCG	AGEC Multicultural Equivalent	3	C,G
ZTR MCICG	AGEC Multicultural 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.

# Educational Programs, Degrees and Certificates

## Degrees and Certificates

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 AGECEC.
- 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 AGECEC.
- 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 AGECEC.
- 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 AGECEC.
- 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 Certificate**  
A Certificate is a credit certificate 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 Certificate of Completion**  
For students completing credit or clock-hour courses in a prescribed pathway, as approved by the College Curriculum Council, and leading to improved employability, job opportunities, or transfer to a bachelor's degree program, a certificate of completion may be awarded. A certificate of completion confirms via the academic transcript that a student has completed an educational program of prescribed courses that prepares him or her to progress in a career path or to take degree-applicable credit courses.
- COC Certificate of Competency**  
For students completing noncredit courses in a prescribed pathway, as reviewed by the College Curriculum Council, that prepares students for employment. A certificate of competency confirms via the academic transcript that a student enrolled in a noncredit educational program and has demonstrated achievement in a set of competencies that prepares him or her to progress in a career path and/or is prepared to take a licensure exam. In order to offer and confer a certificate of competency, the certificate must list the relevant competencies achieved by the student.
- COA Certificate of Achievement**  
A certificate of achievement may be awarded for approved programs of study such as basic skills or English as Second Language (ESL) coursework and other curriculum offered by the Center for International Education and Global Engagement. A certificate of achievement confirms via the academic transcript that the student enrolled in coursework and met the minimum competencies outlined in the associated course outlines.
- 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.

# 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 <b>Under Review</b>	CERT	CRTFLDARCHEO	ARF		WC
Concentrations:					
Field and Lab Fundamentals				ARCL	
Field Methods				ARCM	
Geospatial Information Studies & Technology				ARCC	
Southwestern Cultures				ARCS	
<b>Automotive Technology</b>					
Automotive Mechanics	CERT	CRTAUTOMECHS	AUM		DC
Automotive Technology	AAS	AASAUTOTECHN	AUT		DC
<b>Aviation Technology</b>					
Advanced Aviation Technology <b>Under Review</b>	CERT	<b>Selective Admissions**</b>			DV
Concentrations:					
General Mechanics				AVMG	
Airframe Mechanics				AVMF	
Powerplant				AVMP	
Aviation Structural Repair				AVMS	
Aviation Technology	AAS	<b>Selective Admissions**</b>			DV
Concentrations:					
Airframe and Powerplant				AVMA	
Structural Repair				AVMS	
Avionics Technician				AVMT	
Avionics Technician	CERT	<b>Selective 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>Behavioral Health Services</b>					
Behavioral Health Services <b>Under Review</b>	CERT	CRTBHS	BHS		DV
<b>Biotechnology</b>					
Biotechnology	CERT	<b>Selective Admissions**</b>			WC
<b>Building and Construction Technologies</b>					
Basic Building & Construction Technologies	CERT	CRTBLDGCON-B	BCB		DC
Advanced Building & Construction Technologies <b>Under Review</b>	CERT	CRTBLDGCON-A	BCA		DC
<u>Concentrations:</u>					
Carpentry				BCTC	
Electrical				BCTE	
Facilities Maintenance				BCTF	
Heating, Ventilation, Air Conditioning, & Refrigeration (HVAC-R)				BCTH	
Plumbing				BCTP	
Building & Construction Technologies	AAS	AASBLDGCONST	BCT		DC
<u>Concentrations:</u>					
Building Management				BCTB	
Cabinetmaking				BCTK	
Carpentry				BCTC	
Construction Management				BCTM	
Electrical				BCTE	
Electrical Utilities Technology				BCTG	
Facilities Maintenance				BCTF	
Heating, Ventilation, Air Conditioning, & Refrigeration (HVAC-R)				BCTH	
Natural Gas Technology				BCTN	
Plumbing				BCTP	
Solar Installer				BCTI	
Cabinetmaking	CERT	CRTCМК	CMK		DC
Home Maintenance and Repair					
Minor Home Improvements	CERT	CRTMHI	MHI		DC
Limited Remodeling and Repair	CERT	CRTLRR	LRR		DC
General Residential Contractor	CERT	CRTGRC	GRC		DC
Solar Installer	CERT	CRTSIC	SIC		DC
<b>Business</b>					
Basic Business	CERT	CRTBUSINES-B	BUB		EC
Advanced Business	CERT	CRTBUSINES-A	BUA		EC
Business	AAS	AASBUSINESS	BUS		EC
<u>Concentrations:</u>					
Logistics					
Marketing					
Management					
Tourism					
Customer Service Management	CERT	CRTCSV	CSV		DC
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
<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>Selective Admissions**</b>			NW
Clinical Research Coordinator	CERT	<b>Selective Admissions**</b>			NW
<b>Computer-Aided Drafting/Design Technology</b>					
Computer-Aided Drafting/Design, Basic <b>Under Review</b>	CERT	CRTCONDRFT-B	CAB		DC
Computer-Aided Drafting/Design, Adv. <b>Under Review</b>	CERT	CRTCONDRFT-A	CAA		DC
Computer-Aided Drafting/Design <u>Concentrations:</u> Mechanical/Electro-Mechanical Construction Integrated Circuit Layout Design	AAS	AASELECMECHN	CAD	DFTA DFTC DFTI	DC
Integrated Circuit Layout Design	CERT	CRTICD	ICD		DC
<b>Computer Information Systems</b>					
Computer Programmer Specialist <u>Concentrations:</u> Programming in "C" Programming in Visual Basic Programming for the Web	CERT	<b>Selective Admissions**</b>		CSPC CSPV CSPW	WC
Computer Programmer/Analyst	AAS	AASCMPPRGANL	CSP		WC
Systems Administration/Networking <u>Concentrations:</u> Administrator CISCO Microsoft Linux	CERT	CRTNETWRKADM	CSD	CSNA CSNC CSNM CSNX	WC
Systems Administration/Networking <u>Concentrations:</u> Administrator Cyber Security	AAS	AASCOMPSYSAD	CSN	CSNA CSNY	WC
<b>Culinary Arts</b>					
Culinary Arts <b>Under Review</b>	CERT	<b>Selective Admissions**</b>			DV
Culinary Arts <b>Under Review</b>	AAS	<b>Selective Admissions**</b>			DV
<b>Dental Studies</b>					
Dental Assisting Education	CERT	<b>Selective Admissions**</b>			WC
Dental Hygiene Dental Laboratory Technology Complete Dentures Technologist	AAS	<b>Selective Admissions**</b>			WC
Dental Ceramics Technologist	CERT	<b>Selective Admissions**</b>			WC
Fixed Bridgework Technologist	CERT	<b>Selective Admissions**</b>			WC
Partial Dentures Technologist	CERT	<b>Selective Admissions**</b>			WC
Dental Laboratory Technology	AAS	<b>Selective Admissions**</b>			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*
<b>Digital Arts</b>					
Digital Arts <b>Under Review</b>	CERT	CRTCOMMGRAPH	DAC		WC
Digital Arts <b>Under Review</b>	AAS	AASCOMMGRAPH	DAR		WC
<u>Concentrations:</u>					
Design				DARD	
Illustration				DARI	
Multimedia				DARM	
Web Design				DARW	
Digital and Film Arts <b>Under Review</b>	CERT	CRTDIGIFILM	MDF		WC
<u>Concentrations:</u>					
Animation				MDFA	
Cinematography				MDFC	
Digital Video Production				MDFD	
Sound Design				MDFS	
Digital and Film Arts <b>Under Review</b>	AAS	AASDIGIFILM	MEF		WC
Digital and Film Arts – Animation <b>Under Review</b>	AAS	AASANIMATION	ANM		WC
Digital Game & Simulation <b>Under Review</b>	AAS	AASDAG	DAG		WC
<u>Concentrations:</u>					
Digital Animation and Production				DAGA	
Digital Programming				DAGP	
<b>Direct Care Professional</b>					
Basic Direct Care Professional	CERT	CRTDCP	DCP		NW
<b>Education</b>					
<b>Early Childhood Education and Child Development Associate</b>					
Basic Early Childhood Studies <b>Under Review</b>	CERT	CRTECB	ECB		DV
<u>Concentrations:</u>					
Child Development Associate Credential Preparation		ECBC			
Early Childhood Foundations		ECBF			
Advanced Early Childhood Studies	CERT	CRTECA	ECA		DV
Early Childhood Studies	AAS	AASECS	ECS		DV
<b>Teacher Education</b>					
Elementary and Secondary Certification <b>Under Review</b>	CERA		<b>Selective Admissions**</b>		CC
Special Education Mild-Moderate Disability Certification <b>Under Review</b>	CERA		<b>Selective Admissions**</b>		CC
Special Education Mild-Moderate Disability Certification for Certified Teachers <b>Under Review</b>	CERA		<b>Selective Admissions**</b>		CC
<b>Educational Technology</b>					
Basic Educational Technology	CERT	CRTINTEDUTEC	ETB		CC
<b>Emergency Medical Technology</b>					
Emergency Medical Technology	CERT		<b>Selective Admissions**</b>		EC
EMT Paramedic	AAS		<b>Selective Admissions**</b>		EC
<b>Fashion Design</b>					
Fashion Design	CERT	CRTFDC	FDC		WC
Also See Applied Arts, Art Electives list					

\* 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>Fire Science</b>					
Fire Science Academy Track	CERT				CC
Fire & Emergency Services Higher Education (FESHE)	AAS				CC
<u>Concentrations:</u>					
Fire and Emergency Service Higher Education (FESHE)			FSCF		
Vocational Academy			FSCV		
<b>Fitness and Sport Sciences</b>					
Coaching	CERT	CRTCOACHING	FSG		WC
Fitness Professional	CERT	CRTFITNESS	FSP		WC
<b>Fraud Examination</b>					
Fraud Examination	CERA				DC
<b>Health Information Management</b>					
Health Information Technology <b>Under Review</b>	AAS				DC
Health Information Technology <b>Under Review</b>	CERT				DC
<u>Concentrations:</u>					
Medical Billing and Coding				OAHB	
Medical Front Office Support				OAHF	
Health Information Management				OAHM	
(see also Office and Administrative Professions)					
<b>Hotel and Restaurant Management</b>					
Hotel and Restaurant Management	CERT	CRTHRM	HRC		NW
<b>Human Resources</b>					
Human Resources	CERT	CRTHUMANRES	HRS		CC
<b>Law Enforcement Academy</b>					
Law Enforcement Academy	CERT				CC
Law Enforcement	AAS				CC
<b>Logistics and Supply Chain Management</b>					
See Business					
<b>Legal Assistant</b>					
See Paralegal					
<b>Machine Tool Technology</b>					
Machine Tool Technology <b>Under Review</b>	CERT	CRTMACHNTOOL	MCT		DC
<u>Concentrations:</u>					
Computer Numerical Control (CNC) Machinist				MACC	
Mechanical Inspector				MACI	
Manual Machinist				MACM	
Machine Operator				MACO	
Computer Numerical Control (CNC) Programmer				MACP	

\* 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*
Machine Tool Technology <u>Concentrations:</u> Computer Numerical Control (CNC) Machinist Mechanical Inspector Manual Machinist Machine Operator Computer Numerical Control (CNC) Programmer	AAS	AASMACHNTOOL	MAC	MACC MACI MACM MACO MACP	DC
<b>Message</b>					
See Therapeutic Massage					
<b>Medical Assistant Under Review</b>					
Medical Assistant <u>Concentrations:</u> Administrative Clinical	CERT	Selective Admissions**		HPMA HPMC	DV DV DV
<b>Medical Laboratory Technician</b>					
Medical Laboratory Technician	AAS	Selective Admissions**			WC
<b>Nursing</b>					
Associate Degree Nursing	AAS	Selective Admissions**			WC
Practical Nursing	CERT	Selective Admissions**			WC
<b>Paralegal</b>					
Paralegal	AAS	AASLEGALASST	LAS		DC
Paralegal	CERA	Selective Admissions**			DC
<b>Pharmacy Technology</b>					
Pharmacy Technology	CERT	Selective Admissions**			EC
Pharmacy Technology	AAS	Selective Admissions**			EC
<b>Phlebotomy</b>					
Phlebotomy	CERT	Selective Admissions**	PHB		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 Disorders Specialty	AAS	AASSUBSTABUS	SSS		WC
Youth Services Specialty	AAS	AASYOUTHSERV	SSY		WC
Basic Social Services	CERT	CRTSOCIALSRV	SSC		WC
Substance Use Disorders Specialty	CERT	CRTSUBSTABUS	SSA		WC
Domestic Violence Intervention	CERT	CRTDOMESVIOL	SSD		WC
Community Health Advisor	CERT	CRTHEALTHADV	CHA		WC
<b>Technical Writing &amp; Communication</b>					
Technical Writing & Communication	CERA	Selective Admissions**			DC

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\*\* Selective Admissions Requirements—See an advisor

## Occupational Programs (continued)

Program	Award	Program Code	Major Code	Concentration Code	Lead Campus*
<b>Technology</b>					
Electronic Assembly Technology <b>Under Review</b>	CERT	CRTTECHNOLGY	TEE		WC
Technology <b>Under Review</b>	AAS	AASTEK	TEK		WC
Concentrations:					
Electronic				TEKE	
IT Specialist				TEKI	
Optics				TEKO	
<b>Therapeutic Massage</b>					
Therapeutic Massage	CERT	<b>Selective Admissions**</b>			NW
Therapeutic Massage	AAS	<b>Selective Admissions**</b>			NW
<b>Tourism</b>					
See Tourism concentration in Business					
<b>Translation and Interpretation Studies</b>					
Translation & Interpretation Studies	CERT	<b>Selective Admissions**</b>			DC
Translation & Interpretation Studies	AAS	<b>Selective Admissions**</b>			DC
<b>Truck Driver Training</b>					
Class A Vehicle Driver	CERT	<b>Selective Admissions**</b>			CC
Coach/Transit Bus Driver	CERT	<b>Selective Admissions**</b>			CC
<b>Veterinary Science</b>					
Veterinary Practice Assistant	CERT	<b>Selective Admissions**</b>			EC
Veterinary Technician	AAS	<b>Selective Admissions**</b>			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	AOADMINJUST	AJT	
<b>American Sign Language &amp; Interpretation Studies</b> <i>Under Review</i>	AGS	<b>Selective Admissions**</b>		
<b>American Indian Studies</b>	AA	AOAAMRINDSTU	AIS	
<b>Anthropology</b> <u>Concentrations:</u> Anthropology Archaeology	AA	AOANTHROPOL	ANT	AANT AARC
<b>Arizona General Education Curriculum (AGEC) CERT</b> AGEC-A (Liberal Arts) AGEC-B (Business Administration) AGEC-S (Science/Technology)		Use program code of Transfer degree		
<b>Arts, Fine</b> Associate of Fine Arts Degree, Visual and Performing Arts <u>Concentrations:</u> Dance Music Theater Visual Arts	AFA	AFAFINEARTS	AFA	AFAD AFAT AFAV
<b>Business</b> Business Administration International Business Management Retailing and Fashion Consumer Sciences	ABUS CERT AA	AOBBUSIADMIN <b>Selective Admissions**</b> AOABFT	BUD BFT	
<b>Education</b> Early Childhood Education Education <u>Concentrations:</u> Elementary Education Early Childhood Education	AA AA	AOAECE AOAEDUCATION	ECE EDU	EDUL EDUC
<b>Engineering</b> Engineering <i>Under Review</i>	AS	AOSSCIENCE	ASI	
<b>Honors Program</b> Honors Program	CERT	<b>Selective Admissions**</b>		
<b>Hotel and Restaurant Management</b> Hotel and Restaurant Management	AA	AOAHSPTALITY	HRM	
<b>Liberal Arts</b> Associate of Arts General, no concentrations <u>Concentrations:</u> History Psychology	AA	AOALIBRALART	ALA	(none) ALAH ALAP

\* 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>Political Science</b>				
Political Science	AA	AOAPOLITLSCI	POS	
<b>Science</b>				
Associate of Science	AS	AOSSCIENCE	ASI	
<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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-65.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7216

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 ( <i>was ACC 101</i> ) SUN# ACC 2201 .....	3
ACC 215*	QuickBooks Computer Accounting .....	3
BUS 148	Ethics in the Workplace .....	3
WRT 154*	Career Communications .....	3
<b>Total credits as displayed .....</b>		<b>26</b>

† Core or support course(s) fulfill this requirement.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* This course requirement may be waived with a required score on the writing assessment test.

# 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: 520-206-7134

Lead Faculty: 520-206-7216

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
WRT 154 is recommended.	
Analysis and Critical Thinking Requirement .....	6
Humanities and Social Science Requirement .....	6
ECN 201 or 202 and BUS 148 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>

Course Number	Course Title	Credit Hours
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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 215*	QuickBooks Computer Accounting .....	3
ACC 233	Cost Accounting .....	3
or ACC 273*	Governmental Accounting	
ACC 221*	Intermediate Accounting I .....	3
Electives:	.....	3
Complete 3 credits from the following list: ACC 190, 250, ECN, MKT, MGT		
<b>Subtotal .....</b>		<b>32</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>60-62</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



# 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 142 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

In addition, select two of the following courses: . . . . . 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*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing 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
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
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
Department Electives:		
In addition, select two of the following courses: .....		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>
<b>Required Support Courses</b>		
Select one of the following courses:		
PSY 101	Introduction to Psychology SUN# PSY1101.....	4
or SOC 101	Introduction to Sociology SUN# SOC 1101.....	3
<b>Subtotal .....</b>		<b>3-4</b>
<b>Total credits as displayed .....</b>		<b>62-63</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 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: 520-206-6996

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 one course from the Art List.	
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.

‡ 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 description section.

# American Sign Language and Interpreter Studies

## American Sign Language and Interpreter Studies—Associate of General Studies Degree 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 in English and American Sign Language needed to analyze discourse in English and American Sign Language (ASL).

### What can I do with this degree?

- Career Options:** The AGS degree in American Sign Language and Interpreter Studies provides the graduate with an educational foundation for articulation to a baccalaureate granting institution.
- Academic Options:** Transfer to a university degree program in Interpreter Studies or a related program.
- Location:** West Campus
- Department/Contact Information:**  
 Dean: 520-206-6996  
 Lead Faculty: 520-206-6094  
 Video Relay Service/Video Phone: 520-445-8338
- Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program, you must fulfill the following requirements.

WRT	101*	Writing I .....	5
ASL	101	American Sign Language I .....	4
ASL	102*	American Sign Language II .....	4
ASL	201*	American Sign Language III .....	4
Complete or be concurrently enrolled in			
WRT	102*	Writing II .....	5
ASL	202*	American Sign Language IV .....	5
<b>Subtotal .....</b>			<b>12</b>

### 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 .....	†
WRT 101 and WRT 102 fulfill this requirement.	
Humanities and Fine Arts .....	6
Biological and Physical Sciences .....	8
Mathematics .....	3
Social and Behavioral Science Requirement .....	6
Other Requirements .....	†
ASL 201 and 202 fulfill this requirement	
AGEC 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
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### Required Core Courses - A grade of C or better is required for graduation.

ASL	200*	Introduction to the Deaf Community .....	3
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>22</b>

**Required Support Courses**

CSA 100**	Computer Fundamentals .....	1
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102 .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>64</b>

¥ 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.

\*\* Completion of the AGEC-A and CSA 100 meet the general education requirements for the AGS degree.

§ Credits counted below.

† Program prerequisite(s) fulfill this requirement.

# 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: 520-206-6996

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 101 fulfills 3 credits of this requirement. Complete a non-ANT 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.	

#### **Anthropology Concentration** (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 .....	or Language courses numbered 201 and 202, third and fourth semester level	6-8
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

**This certificate is currently under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-30.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	Introduction to Southwestern Prehistory .....	3
ANT/ARC 225*	Principles of Archaeology .....	3
<b>Subtotal</b> .....		<b>9</b>

*Continued next page*

**Field Methods** (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	Global Positioning Systems .....	1
ARC Elective	Elective in consultation with ARC faculty advisor .....	3
<b>Subtotal</b> .....		<b>15</b>

**Geospatial Information Studies and Technology** (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.

# 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
Biological and Physical Sciences (2 courses w/ labs) .....	8
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</b> .....	<b>35</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 of 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

**Art History and Art Education**

ART 105	Exploring Art and Visual Culture .....	3
ART 133	Art in America .....	3
ART 135	Pre-Columbian Art .....	3
ART 136	Body and Art .....	3
ART 230	History of Photography .....	3
ART 250*	Gallery and Museum Practices .....	3
ART 29611*	Independent Study in ART: Art History .....	3

**Ceramics**

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

**Digital Arts**

DAR 103	Introduction to Digital 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 223*	Digital Drawing and Painting .....	4
DAR 226*	DeskTop Publishing for Digital Arts: Adobe InDesign .....	4
DAR 246	Lighting for Photography II .....	4

**Fashion Design**

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 132	Global Fashion and Culture .....	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 224*	Computer Pattern-Making III .....	3
FDC 241*	Draping I .....	3
FDC 242*	Draping II .....	3
FDC 245	Digital Fashion Design .....	3
FDC 289*	Fashion Design and Clothing Capstone .....	3

**Fiber Art**

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
<b>Metalwork</b>		
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 271*	Metalwork II: Smithing and Casting .....	3
ART 29613*	Independent Study in ART: Metals .....	3
<b>Painting and Drawing</b>		
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 227	Painting III .....	3
ART 29614*	Independent Study in ART: Painting, Drawing, and Design .....	3
<b>Photography</b>		
ART 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 29615*	Independent Study in ART: Photography .....	3
<b>Printmaking</b>		
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 29616*	Independent Study in ART: Printmaking .....	3
<b>Sculpture/Glass Art</b>		
ART 121*	Figure Sculpture .....	3
ART 220*	Sculpture .....	3
ART 265*	Furnace Glassblowing I .....	3
ART 266*	Furnace Glassblowing II .....	3
ART 29617*	Independent Study in ART: Sculpture .....	3
ART 29619*	Independent Study in ART: Glass .....	3
<b>Other</b>		
MKT 139 or BUS 100	Retailing .....	3
MAC 110	Introduction to Business .....	4
WLD 120	Manual Machine Shop .....	4
	Welding for Metal Sculpture .....	4
<b>Subtotal</b> .....		<b>30</b>
<b>Total credits as displayed</b> .....		<b>64-66</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.

## 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 .....	3
<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 271*	Metalwork II: Smithing and Casting	3
ART 280*	Weaving II	3
ART 296I2*	Independent Study in ART: Ceramics	3
ART 296I8*	Independent Study in ART: Fibers	3

**Photography**

ART 128*	Digital Photography I	4
ART 140*	Photography I	3
ART 141*	Photography II	3
ART 147*	Alternative Processes in Photography	3
ART 230	History of Photography	3
ART 296I5*	Independent Study in ART: Photography	3

**Art History**

ART 135	Pre-Columbian Art	3
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

**Subtotal** ..... **16**  
**Total credits** ..... **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** .....	6
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>35</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>	

### Support Electives

Choose up to 5 credits.\*\*\*

Note: Classes taken for repeat credit will only count once. ....	5	
DNC 152*	Ballet III .....	2
DNC 168*	Modern Dance III .....	2
DNC 221	Jazz Dance III .....	2
MUS 151	Exploring Music .....	3
MUS 160	Popular Music in America .....	3
THE 105*	Theater Appreciation .....	3
<b>Subtotal .....</b>	<b>5</b>	
<b>Total credits .....</b>	<b>67</b>	

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Some support electives fulfill requirements in this category. See an advisor.

\*\*\* Additional credits may be needed to have a minimum of 60 credits if these courses also satisfy General Education Requirements.

## 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

**Selective Admissions Program:** You are not fully admitted to this program until you have auditioned. 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 .....	2
MUS 120*	Concert Band .....	3
MUS 130*	Chorale (SATB) .....	3
MUS 131*	College Singers (SATB) .....	3

<b>Subtotal</b> .....	<b>6</b>
<b>Total credits</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>

**Core Options: - A grade of C or better is required for graduation.**

Complete one of the following options after consulting with a theatre department faculty advisor or counselor:

**Option 1**

THE 118	Basic Theater Graphics .....	3
THE 223	Scene Design .....	3

**Option 2**

THE 250*	Acting: Auditioning for Theater .....	3
THE 251*	Acting: Shakespeare and Classical Literature .....	3

**Subtotal** ..... **6**

**Total credits** ..... **65**

† 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.

# Associate of Arts

## Associate of Arts Degree for Transfer in Liberal Arts

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 Psychology and History, and emphases in Creative Writing and Communication. 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
- Gender and Womens 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

### 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>

# Associate of 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 CHM 151 & 152 and their labs or PHY 210 & 216 and their labs, or BIO 181 & 182 and their labs, 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	General Biology I: (Majors) SUN# BIO 1181 .....	8-10
BIO 182IN* OR	General Biology II: (Majors) SUN# BIO 1182	
CHM 151/151LB or 151IN* and	General Chemistry I SUN# CHM 1151	
CHM 152/152LB or 152IN* OR	General Chemistry II SUN# CHM 1152	
PHY 210/210LB or 210IN* and	Introductory Mechanics SUN# PHY 1121	
PHY 216/216LB or 216IN* and	Introductory Electricity and Magnetism SUN# PHY 1131	
MAT 220*	Calculus I SUN# MAT 2220 .....	5
Major/Electives .....	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.)	21-25
<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.



## Astronomy

Learn more about our vast universe and its fascinating contents – planets, stars, comets, galaxies, black holes and more – by taking astronomy courses. Classes include lecture, activities labs, and outside observation projects.

Astronomy courses are offered as part of the requirements of the **Associate of Science degree**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU or UA should meet with an astronomy faculty member or advisor to plan their course of study using the appropriate major guide.

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### What can I do with my studies in astronomy?

**Career options:** After completing a bachelor's degree, seek employment as a science teacher, museum/planetarium staff member, or science writer.

**Academic options:** Continue studies toward a Bachelor of Science in astronomy, planetary sciences, or education.

**Locations:** All campuses

**Contact Information:** Contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).

# 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-37.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.

### 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:** Desert Vista Campus
- Department/Contact Information:**  
 Dean: 520-206-5250  
 Lead Faculty: 520-206-5910
- Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. 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 pursuing the Airframe and Powerplant concentration must complete the General Mechanics advanced certificate courses before enrolling in the Airframe Mechanics or Powerplant courses.**

**Students enrolled in an Avionics or Structural Repair program (degree concentration or certificate) who also wish to be eligible for Airframe and Powerplant certification must be concurrently enrolled in or have completed the General Mechanics advanced certificate courses before enrolling in 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 .....	3-6
(GTM 105V in the <i>Structural Repair concentration</i> fulfills 3 credits in the Mathematics category.)	
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	1-3
<b>Subtotal</b> .....	<b>16-21</b>

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
Complete one of the following concentrations .....		41-69
<b>Airframe and Powerplant</b> (Concentration Code: AVMA)		
AVM 105	Aircraft Sheetmetal Repair .....	5
AVM 130*	Aircraft Composite Repair .....	5
AVM 209	Intermediate Electricity .....	5
AVM 211	Alternate Structures .....	5
AVM 218	Airframe Rigging and Landing Gear Systems .....	3

AVM 219*	Airframe Inspections	3
AVM 223	Hydraulic and Pneumatic Power	3
AVM 224	Atmospheric Controls	3
AVM 225	Fire, Ice, Rain and Fuel Systems	3
AVM 226*	Engine Electrical Systems	5
AVM 227	Engine Air Flow Systems	3
AVM 228*	Aircraft Propellers	3
AVM 229*	Engine Support Systems	3
AVM 231	Engine Principles, Monitoring, and Inspection	5
AVM 232	Reciprocating Engine Overhaul	5
AVM 233	Turbine Engines	5
AVM 234*	Engine Fuel Metering and Operation	5
<b>Subtotal</b>		<b>69</b>

**Structural Repair** (Concentration Code: AVMS)

AVM 101*	Structural Repair I	4
AVM 102*	Structural Repair II	4
AVM 110	Aircraft Blueprint Reading	3
AVM 114	Regulatory Requirements	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
AVM 205	Motion Dynamics	3
AVM 206	Materials and Processes	3
AVM 210/210LB	Advanced Composite Aircraft Repair I	5
AVM 211	Alternate Structures	5
AVM 260*/260LB*	Advanced Composite Aircraft Repair II	4
GTM 105V***	Applied Technical Mathematics for Aviation	3
<b>Subtotal</b>		<b>56</b>

**Avionics Technician** (Concentration Code: AVMT)

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
<b>Subtotal</b>		<b>41</b>

**Total credits as displayed with program prerequisites** ..... **60-97**

\* 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.

## Advanced Aviation Technology — Certificate for Direct Employment

**This certificate is under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more

<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-38.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5250

Lead Faculty: 520-206-5910

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. 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

**Subtotal** ..... **0-7**

**Students must complete the General Mechanics courses before enrolling in the Airframe Mechanics or Powerplant courses.**

**Students enrolled in an Avionics or Structural Repair program (degree concentration or certificate) who also wish to be eligible for Airframe and Powerplant certification must be concurrently enrolled in or have completed the General Mechanics courses before enrolling in Airframe Mechanics or Powerplant courses.**

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:

**General Mechanics** (Concentration Code: AVMG)

AVM 110	Aircraft Blueprint Reading .....	3
AVM 114	Regulatory Requirements .....	3
AVM 202	Aviation Safety .....	3
AVM 205	Motion Dynamics .....	3
AVM 206	Materials and Processes .....	3
AVM 207*	Weight and Balance .....	3
AVM 208*	Basic Electricity .....	5
GTM 105V**	Applied Technical Mathematics for Aviation .....	3
<b>Subtotal</b>	.....	<b>26</b>

**Airframe Mechanics** (Concentration Code: AVMF)

AVM 105	Aircraft Sheetmetal Repair .....	5
AVM 130*	Aircraft Composite Repair .....	5
AVM 209*	Intermediate Electricity .....	5
AVM 218	Airframe Rigging and Landing Gear Systems .....	3
AVM 223	Hydraulic and Pneumatic Power .....	3
AVM 224	Atmospheric Controls .....	3
AVM 225	Fire, Ice, Rain, and Fuel Systems .....	3
<b>Subtotal</b>	.....	<b>27</b>

**Powerplant** (Concentration Code: AVMP)

AVM 226*	Engine Electrical Systems .....	5
AVM 228*	Aircraft Propellers .....	3
AVM 229*	Engine Support Systems .....	3
AVM 232	Reciprocating Engine Overhaul .....	5

AVM 233	Turbine Engines .....	5
AVM 234*	Engine Fuel Metering and Operation .....	5
<b>Subtotal</b> .....		<b>26</b>
<b>Structural Repair</b> (Concentration Code: AVMS)		
AVM 101*	Structural Repair I .....	4
AVM 102*	Structural Repair II .....	4
AVM 114	Regulatory Requirements .....	3
AVM 150*	Structural Repair III .....	4
AVM 151*	Structural Repair IV .....	4
AVM 203*	Structural Repair V .....	4
AVM 204*	Structural Repair VI .....	4
<b>Subtotal</b> .....		<b>27</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>26-34</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.

### 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 take additional courses toward the Aviation Technology AAS degree.

**More Information:** Review program costs, student debt, on-tme graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-39.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5250  
 Lead Faculty: 520-206-5910

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. 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>

### 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 .....	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>		
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
<b>Subtotal .....</b>		<b>41</b>
<b>Total credits as displayed with program prerequisites .....</b>		<b>47-54</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.



## Biology

Study the science of living systems by taking biology courses that focus on microbiology, plant science, human anatomy and physiology, marine biology, biotechnology and more. Students learn through lecture and hands-on lab experiences.

Biology courses are offered as part of the requirements of the **Associate of Science degree**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU, or UA should meet with biology faculty or an advisor to plan their course of study using the appropriate major guide.

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### *What can I do with my studies in biology?*

**Career options:** Work as a technician in laboratories, manufacturing firms, or government.

**Academic options:** Continue studies toward a Bachelor of Science in biology, microbiology, agriculture, plant or animal science and more.

**Locations:** All campuses

**Contact Information:** Contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).

# 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 take the College Reading, Math and Writing assessment and achieve the appropriate placement scores.

## Behavioral Health Services — Certificate for Direct Employment

**This certificate is under review. See the website or an advisor for details.**

### 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-93.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**  
 Dean: 520-206-5142

**Selective 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 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>Total credits as displayed .....</b>		<b>18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Biotechnology

Prepare for a high-tech career in biotechnology by completing this certificate and working in local industry, or using it to complement an associate or bachelor's degree in the life sciences.

## Biotechnology — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

### What can I do with this certificate?

**Career Options:** Entry-level positions in biotechnology laboratories or career advancement when used to supplement existing degrees or work experience.

**Academic Options:** Complete additional courses to earn an Associate of Science degree.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-21.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6763

Lead Faculty: 206-6810

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program, you must complete the following courses:

MAT 097* or higher, or placement into MAT 151 or higher	0-3
BIO 181IN*      General Biology I: Majors	4
CHM 151*/151LB*      General Chemistry I or 151IN*	5
<b>Subtotal</b>	<b>9-12</b>

Course Number	Course Title	Credit Hours
<b>Required Core Course - A grade of C or better is required for graduation.</b>		
BIO 206	Biotechnology Instrumentation I	4
BIO 207*	Biotechnology Instrumentation II	4
BIO 299*	Co-op: Biotechnology	1
BIO 299WK*	Co-op Work: Biotechnology	3
CHM 152*/152LB* or CHM 152IN*	General Chemistry II SUN# CHM 1152	5
CHM 235*/235LB* or CHM 235IN*	General Organic Chemistry I SUN# CHM 2235	5
CHM 236*/236LB* or CHM 236IN*	General Organic Chemistry II SUN# CHM 2236	5
<b>Subtotal</b>		<b>27</b>
<b>Total credits as displayed with program prerequisites</b>		<b>36-39</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## 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.

### Basic Building and Construction Technologies — Certificate for Direct Employment

Get started in facilities maintenance. Courses cover tools, safety, rigging, and reading blueprints, as well as technical electives based on student interests.

#### What can I do with this certificate?

**Career Options:** Apply for entry-level positions in facilities maintenance.

**Academic Options:** Continue your studies through the Advanced Certificate program.

**More Information:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-32.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7137

Program/Major Codes: **CRTBLDGCON-B/BCB**

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>		
GTM 105*	Applied Technical Mathematics .....	3
Technical Electives:	.....	9
Complete 9 credit hours from the following list with the approval of the department chair or faculty advisor: BCT 104, 106, 132, 145, 150, 172		
<b>Subtotal</b> .....		<b>12</b>
<b>Total credits as displayed</b> .....		<b>18</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

**This certificate is currently under review. See the website or an advisor for details.**

Advance to technician or journeyman levels. Choose from concentrations in facilities maintenance, 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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-36.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 .....	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.**

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 four credit hours of BCT course work with the approval of the department chair or faculty advisor .....		4
<b>Subtotal .....</b>		<b>8</b>

**Core Concentrations - A grade of C or better is required for graduation.**

Complete one of the following concentrations:

Department chair or faculty advisor approval is recommended in the selection of the Concentration. .... 15-16

**Carpentry** (Concentration Code: BCTC)

BCT 101	Principles of Construction .....	3
BCT 120*	Blueprint Reading for Construction ) .....	3
BCT 145*	Carpentry I .....	4
BCT 146	Woodworking I .....	3
BCT 147*	Woodworking II .....	3
<b>Subtotal .....</b>		<b>16</b>

**Facilities Maintenance** (Concentration Code: BCTF)

BCT 104*	Introduction to Equipment Maintenance .....	4
BCT 106*	Soldering and Brazing for BCT .....	4
BCT 132*	Residential and Industrial HVAC I .....	4
BCT 172*	Electrical I .....	4
<b>Subtotal .....</b>		<b>16</b>

**Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC-R)** (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
<b>Subtotal .....</b>		<b>16</b>

**Electrical** (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
<b>Subtotal .....</b>		<b>16</b>

**Plumbing** (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
<b>Subtotal</b> .....		<b>15</b>
<b>Total credits as displayed</b> .....		<b>32-33</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.

\*\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitute for BCT 107.

## Cabinetmaking — 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-41.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

**Lead Faculty:** 520-206-7137

Program/Major Codes: **CRTCMK/CMK**

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 substitute for BCT 107

## Home Maintenance and Repair: Minor Home Improvements — Certificate for Direct Employment

Learn to perform home improvements while preparing to take the Arizona Contractor Business Management (C-62 Minor Home Improvements) examination.

### What can I do with this certificate?

**Career Options:** After acquiring the C-62 Minor Home Repair license, contract with home owners to perform home improvement projects up to \$2,500 per project.

**Academic Options:** Continue your studies by taking classes toward the Building and Construction Trades advanced certificate or associates degree with a possible concentration in Facilities Maintenance.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7137

Program/Major Codes: **CRTMHI/MHI**

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 202	Construction Business Management .....	3
<b>Total credits as displayed .....</b>		<b>9</b>

\* BCT 100, 112 and 115 substitute for BCT 105. BCT 111, 113 and 114 substitute for BCT 107.

## Home Maintenance and Repair: Limited Remodeling and Repair — Certificate for Direct Employment

Master the skills needed for home remodeling and repair while preparing for the Arizona Contractor Business Management (C-61 Limited Remodeling and Repair) examination.

### What can I do with this certificate?

**Career Options:** After acquiring the C-61 Limited Remodeling and Repair license, contract with home owners to perform home improvement projects up to \$25,000 including scope of work allowed under the C-7 carpentry classification.

**Academic Options:** Continue your studies by taking classes toward the Building and Construction Trades advanced certificate or associates degree with a possible concentration in Facilities Maintenance or Carpentry.

**More Information:** Review program costs, student debt, on-time graduation and more

<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-33.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7143

Program/Major Codes: **CRTLRR/LRR**

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 101	Principles of Construction .....	3
BCT 102	Building Materials .....	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 202	Construction Business Management .....	3
<b>Total credits as displayed .....</b>		<b>18</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.

## Home Maintenance and Repair: General Residential Contractor — Certificate for Direct Employment

Learn advanced home construction skills while preparing for the Arizona Contractor Business Management (B – General Residential Contractor) examination.

### What can I do with this certificate?

**Career Options:** After acquiring the B – General Residential Contractor license, perform home construction as a General Building Contractor capable of working on any part of a residence with the exception of some specialized areas such as electrical and plumbing.

**Academic Options:** Continue your studies by taking classes toward the Building and Construction Trades advanced certificate or associates degree with a possible concentration in Construction Management, Carpentry or Facilities Maintenance.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-35.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7143

Program/Major Codes: CRTGRC/GRC

Course Number	Course Title	Credit Hours
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
BCT 101	Principles of Construction .....	3
BCT 102	Building Materials .....	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 202	Construction Business Management .....	3
BCT 286*	International Residential Code (IRC) I .....	3
<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 substitute 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.

**Before enrolling in this program,** you must test higher than REA 091 on the PCC assessment, or complete REA 091 with a grade of C or better.

### 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-31.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 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 102	Advanced Photovoltaic Installation	3
SLR 130	Solar Hot Water Systems	4
<b>Total credits as displayed</b>		<b>24</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.

## 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. Complete the Building Management and the Cabinetmaking concentrations by taking classes exclusively in the evenings or in a combination of weekdays and evenings. All other concentrations can be completed by taking classes in a combination of weekdays and evenings.

**Before enrolling in this program**, you must complete REA 081, WRT 090, and MAT 082. Students should have successfully completed course work or assessments within the first year of the program.

### 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

**Selective 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 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
<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
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>
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete one of the following concentrations: .....		32-36
Department chair or faculty advisor approval is recommended in the selection of the program option.		
<b>Building Management</b>		
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: .....		
Complete 14 credit hours from the following list with the approval of the department chair or faculty advisor BCT and CAD		14
<b>Subtotal</b> .....		<b>32</b>
<b>Cabinetmaking</b>		
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 .....		
Complete 6 credits from BCT and/or CAD		6
<b>Subtotal</b> .....		<b>32</b>
<b>Carpentry</b>		
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 .....		
Complete 3 credits from BCT or CAD		3
<b>Subtotal</b> .....		<b>32</b>

**Construction Management**

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>

**Electrical**

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**

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>

**Facilities Maintenance**

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 145*	Carpentry I	4
BCT 150*	Plumbing Basics	4
BCT 172*	Electrical I	4
<b>Subtotal</b>		<b>32</b>

**Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC-R)**

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**

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 (F,Sp)	3
ICT 101	Introduction to the Natural Gas Industry (F,Sp)	3
MGT 110	Human Relations in Business and Industry (F, Sp, Su)	3
MGT 122*	Supervision	3
<b>Subtotal</b>		<b>31</b>

**Plumbing**

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**

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
Electives		8
<b>Subtotal</b>		<b>32</b>

**Total credits as displayed** ..... **60-64**

† 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,

## Business Careers

- Business
- Customer Service Management
- Fashion Merchandising and Retail Management
- 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-59.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*	Writing 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-60.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 ( <i>was ACC 101</i> ) 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*	Writing 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, management or tourism. 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, management or tourism, 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; Tourism concentration at the East 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
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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 ( <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 . . . . .	3
MGT 280*	Business Organization and Management . . . . .	3
MKT 111	Principles of Marketing . . . . .	3
WRT 101*	Writing I SUN# ENG 1101 . . . . .	3
or WRT 154*	Career Communications . . . . .	3
Electives: Select 6 credits hours from the following list: . . . . .		6
ACC, BUS, CIS, CSA, ECN, FIN, MGT, MKT		
<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

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.

**Logistics Concentration** (Concentration Code: BUSL)

LGM 101	Principles of Logistics and Supply Chain Management	3
LGM 102*	Inventory Control	3
LGM 103	Contracts and Freight Claims	
or LGM 104	Survey of Leisure Products	3
LGM 105	Warehouse Management	
or LGM 106	Transportation and Traffic Management	3
<b>Subtotal</b>		<b>12</b>

**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)

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>

**Tourism Concentration** (Concentration Code: BUST)

TVL 101	Introduction to the Travel Industry	3
TVL 102	Computerized Reservation Systems I	3
or TVL 109	Survey of Leisure Products	
or TVL 211	Tour Direction and Tour Group Management	
TVL 103	Geography for the Tourism Professional	3
TVL 121	Tourism Sales and Marketing	3
<b>Subtotal</b>		<b>12</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
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### Required Core Courses - A grade of C or better is required for graduation.

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: .....

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            Topics in Calculus SUN# MAT 2212  
and BUS 277      Analytical Methods in Business

or

MAT 172\*        Finite Mathematics  
and 212\*        Topics in Calculus SUN# MAT 2212

or

MAT 220\*        Calculus I    SUN# MAT 2220  
and 231\*        Calculus II   SUN# MAT 2230

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: 520-206-7046

Lead Faculty: 520-206-7206

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 74.

English Composition .....	6
Humanities and Fine Arts .....	3
ART 100 meets 3 credits of this requirement. Complete a course from the Humanities list.	
Biological and Physical Sciences .....	8
Mathematics .....	†
MAT 212 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 172 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>20‡</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.

MGT 130*	Retail Analysis .....	3
MKT 140	Fashion Merchandising .....	3
MKT 240*	Fashion Merchandising Planning and Control .....	4
<b>Subtotal</b> .....		<b>10</b>

**Required Support Courses**

ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201	3
ACC 212*	Managerial Accounting (was ACC 102) SUN# ACC 2202	3
ART 100	Basic Design	3
BUS 125	eCommerce	3
BUS 205*	Statistical Methods in Economics and Business SUN# BUS 2201	3
CIS 120*	Computer Applications for Business SUN# CIS 1120	4
ECN 201	Microeconomic Principles SUN# ECN 2201	3
ECN 202	Macroeconomic Principles SUN# ECN 2202	3
MAT 172	Finite Mathematics	3
MAT 212	Topics in Calculus SUN# MAT 2212	3
Electives: Complete 2-3 credit hours from the following list:		2-3
MKT 139 or STU 210		
<b>Subtotal</b>		<b>33-34</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.

## 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:** Review program costs, student debt, on-time graduation and more

<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-64.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7046

Lead Faculty: 520-206-7216

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:** Review program costs, student debt, on-time graduation and more

<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-58.html>

**Locations:** All campuses.

**Department/Contact Information:**

Dean: 520-206-7134

Program/Major Codes: **CRTIBM/IBM**

Course Number	Course Title	Credit Hours
Required Core Courses - A grade of C or better is required for graduation.		
BUS 148	Business Ethics .....	3
BUS 210*	International Business .....	3
ECN 202*	Principles of Macroeconomics .....	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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-61.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
<b>Total credits as displayed .....</b>		<b>12</b>
<b>Required Support Courses</b>		
WRT 101* or WRT 154*	Writing I SUN# ENG 1101 .....	3
LGM 109	Readiness Skills for Logistics Careers .....	1
Electives- Choose 3 credit hours from the following list: .....		3
LGM 106	Transportation and Traffic Management	
LGM 108	International Logistics	
<b>Subtotal .....</b>		<b>7</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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-62.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
<b>Subtotal .....</b>		<b>12</b>

### Required Support Courses

LGM 106	Transportation and Traffic Management .....	3
LGM 108	International Logistics .....	3
LGM 109	Readiness Skills for Logistics Careers .....	1
or LGM 196*	Independent Study in Logistics and Supply Chain Management	
LGM 190*	Logistics and Supply Chain Internship .....	3
MGT 122*	Supervision .....	3
WRT 101*	Writing I SUN# ENG 1101 .....	3
or WRT 154*	Career Communications	
<b>Subtotal .....</b>		<b>16</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> ‡

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 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>

<b>Required Support Courses</b>		
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*	Writing I SUN# ENG 1101 .....	3
or WRT 154*	Career Communications .....	3
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.



## Chemistry

Study the composition, properties and interactions of substances by taking chemistry courses that focus on general, consumer, forensic or organic chemistry. Students learn through lecture and hands-on lab experiences.

Chemistry courses are offered as part of the requirements of the **Associate of Science degree**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU or UA should meet with chemistry faculty or an advisor to plan their course of study using the appropriate major guide.

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### *What can I do with my studies in chemistry?*

**Career options:** Work as a technician in laboratories, chemical manufacturing, government, and technical service firms

**Academic options:** Continue studies towards a Bachelor of Science in chemistry, chemical engineering, engineering, education, pharmacy or other health-care fields

**Contact Information:** Contact any campus Student Services office ([www.pima.edu/mhtml/email/advising](http://www.pima.edu/mhtml/email/advising)).

# Clinical Research Coordinator

## Clinical Research Coordinator — Associate of Applied Science for Direct Employment

Learn to manage clinical research trials involving human subject in classes taught by physicians and other clinical research professionals.

### 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: 520-206-2216

Lead Faculty: 520-206-2153

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Complete the following courses with a grade of “C” or better before enrolling in this program:

MAT 097**	Intermediate Algebra .....	3
WRT 101*	Writing I .....	†
<b>Subtotal</b> .....		<b>3</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 either WRT 102 or CMN 120 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	†
BIO 160IN and MAT 097 or higher fulfill this requirement.	
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	†
CIS/CSA 104 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>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.

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>

<b>Required Support Courses - A grade of C or better is required for graduation.</b>		
BIO 160IN	Introduction to Human Anatomy and Physiology .....	4
CIS/CSA 104*	Computer Fundamentals .....	3
CSA 110	Spreadsheets: Microsoft Excel .....	3
REA 112HP***	Critical Reading for Health Professions .....	0-4
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102* or CMN 120	Writing II SUN# ENG 1102..... Business and Professional Communication	3
Electives.....		7-11
<b>Subtotal .....</b>		<b>27</b>
<b>Total credits as displayed with program prerequisites .....</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.  
 \*\* MAT 142, 151, 188, 189, 220 may be substituted for MAT 097.  
 \*\*\* REA 112 may be substituted for REA 112HP. REA 112HP may be waived with an appropriate Reading score on the College Placement assessment. If waived, additional electives will be needed to fulfill Required Support Courses.

# 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.

## Basic Computer Aided Design — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-15.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 206-7252

Program/Major Codes: **CRTCONDRFT-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>Total credits as displayed</b> .....		<b>16</b>

## Advanced Computer Aided Design — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-14.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead faculty: 520-206-7252

Program/Major Codes: **CRTCONDRFT-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 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.**

CAD 101	Computer-Aided Drafting .....	4
<b>Subtotal .....</b>		<b>4</b>

**Required Support Courses**

CAD	Complete 12 credit hours of CAD courses numbered 120 or higher with the approval of the department chair or 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>

## 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-16.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
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**Required Core Courses - A grade of C or better is required for graduation.**

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>

**Required Support Course**

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.

## 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.

**Subtotal .....**18¥

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 142	Introduction to Parametric Modeling: SolidWorks .....	4
CAD 152*	Technical Drafting .....	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

**Subtotal .....**37

**Construction** (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
<i>Complete 16 credit hours from the following courses:</i>		16
CAD 127	Introduction to MicroStation	4
CAD 166	Introduction to Revit	4
CAD 206*	Commercial Design: Revit	4
CAD 207*	Land Development Design: Civil 3D	4
CAD 247*	Transportation Design: MicroStation	4
CAD 256*	Advanced Commercial Design: Revit	4
CAD 257*	Advanced Land Development Design: Civil 3D	4
CAD 265*	Design for Sustainability	4
CAD 266*	Mechanical, Electrical, Plumbing Design: Revit MEP	4
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>

**Integrated Circuit Layout Design** (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, 122, 123.		
<b>Subtotal</b>		<b>37</b>
<b>Total credits as displayed with program prerequisites</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.

# 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 Specialist — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

Take the fast track to becoming a computer programmer with this accelerated program, or enhance existing skills. Choose from concentrations in C programming, Visual Basic programming or web programming.

### What can I do with this certificate?

**Career Options:** Become a C or Visual Basic programmer, or a web site designer, developer or administrator.

**Academic Options:** Continue your studies by taking courses toward a Computer Programmer/Analyst or Associate of Science degree.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-45.html>

**Locations:** East Campus, West Campus

**Department/Contact Information:**

Dean:

206-6996 (West Campus);

206-7694 (East Campus)

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
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### Program Prerequisites and Required Core Courses - A grade of C or better is required for graduation.

Complete one of the following concentrations:

Department chair or faculty advisor approval is recommended in the selection of the program concentration. . . . . 19-32

#### Programming in C (Concentration Code: CSPC)

##### Prerequisites for concentration:

CIS 129\* Programming and Problem Solving I . . . . . 5

CIS 131\* Programming and Problem Solving II . . . . . 4

CIS 250\* Introduction to Assembly Language . . . . . 3

**Subtotal** . . . . . **12**

##### Core Concentration:

CIS 265\* The C Programming Language . . . . . 4

CIS 269\* Data Structures . . . . . 5

CIS 278\* C++ and Object-Oriented Programming . . . . . 4

CIS 279\* Java Programming . . . . . 5

**Subtotal** . . . . . **18**

**Total credits as displayed with program prerequisites** . . . . . **30**

#### Programming in Visual Basic (Concentration Code: CSPV)

##### Prerequisites for concentration:

CIS 129\* Programming and Problem Solving I . . . . . 5

Recommended:

CIS/CSA 104\* Computer Fundamentals . . . . . 0-3

**Subtotal** . . . . . **5-8**

##### Core Concentration:

CIS 141\* Introduction to VB.NET . . . . . 4

CIS 162 Database Design and Development . . . . . 3

CIS 241\* Advanced Visual Basic.NET Programming . . . . . 4

CIS Department Elective (for this concentration only) . . . . . 3-5

Complete any CIS course 129 or higher including prerequisite courses.



<b>Subtotal</b> .....	<b>14-16</b>
<b>Total credits as displayed with program prerequisites</b> .....	<b>19-24</b>

### Programming for the Web (Concentration Code: CSPW)

#### Prerequisites for concentration:

CIS/CSA 104*	Computer Fundamentals .....	3
CIS 119*	Network Essentials .....	3

<b>Subtotal</b> .....	<b>6</b>
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#### Core Concentration:

BUS 125	eCommerce .....	3
CIS 121	Web Publishing .....	3
CIS 185*	Introduction to Python .....	4
CIS 266*	CGI Programming with PERL .....	3
CIS 273*	Advanced Web Page Development .....	4
CIS 279*	Java Programming .....	5
DAR 112	Graphic Design .....	4

<b>Subtotal</b> .....	<b>26</b>
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<b>Total credits as displayed with program prerequisites</b> .....	<b>32</b>
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\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## 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);  
206-6996 (West Campus)

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program, you must fulfill the following requirement.

CIS 129*	Programming and Problem Solving I .....	5
<b>Subtotal</b> .....	<b>5</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 .....	†
MAT 172 and a 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
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
CIS 131*	Programming and Problem Solving II .....	5
CIS 141*	Introduction to VB.NET .....	4
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 269*	Data Structures .....	5
CIS 278*	C++ and Object Oriented Programming .....	4-5
or CIS 279*	Java Programming	
CIS 280*	Systems Analysis and Design: Concepts and Tools .....	4
CIS 281*	Systems Analysis and Design: Applications .....	3
<b>Subtotal</b> .....		<b>38-39</b>

#### Required Support Courses

ACC 211*	Financial Accounting (was ACC 101) SUN# ACC 2201 .....	3
ECN 201*	Microeconomic Principles SUN# ECN 2202 .....	3
MAT 172*	Finite Mathematics .....	3
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102 .....	3
Laboratory Science: Select one course from the following list: .....		4
AST 101IN, 102IN		
BIO 100IN, 105IN, 181IN		
GEO 102		
GLG 101IN, 102IN		
CIS Elective: Select a course below for 3 credit hours .....		3
CIS 199, 219, 221, 225, 241, 266, 299		
<b>Subtotal</b> .....		<b>22</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>68-69</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.

## Systems Administration/Networking — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-56.html>

**Locations:** East Campus, West Campus

**Department/Contact Information:**

Dean:

206-7694 (East Campus);

206-6996 (West Campus)

Program/Major/Concentration Codes: **CRNENETWRKADM/CSD/\*\*\*\*** (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>		
Complete one of the following concentrations: .....		17-20
Department chair or faculty advisor approval is recommended in the selection of the program concentration.		
<b>Systems Administration/Networking – CISCO</b> (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>
<b>Systems Administration/Networking – Linux</b> (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>
<b>Systems Administration/Networking – Microsoft</b> (Concentration Code: CSNM)		
CIS 103	Microsoft Windows Operating System Professional Administration .....	4
CIS 219	Introduction to Virtual Computing .....	4
CIS 221*	Microsoft Windows Server .....	4
CIS 222*	Implementing Windows Network Infrastructure .....	4
CIS 223*	Implementing Windows Directory Services .....	4
<b>Subtotal</b> .....		<b>20</b>
<b>Systems Administration/Networking – Administrator</b> (Concentration Code: CSNA)		
CIS 103	Microsoft Windows Operating System Professional Administration .....	4
CIS 119*	Network Essentials .....	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>19</b>
<b>Total credits as displayed</b> .....		<b>17-20</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),  
206-6996 (West 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
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### Required Core Courses - A grade of C or better is required for graduation.

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 .....	4
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>
<b>Administrator</b> (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.

# Culinary Arts

Set your culinary career in motion and prepare to work in hotels, restaurants and resorts.

## Culinary Arts — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details**

Courses focus on cold foods, hot foods, baking, nutrition, safety and sanitation, and general restaurant operations.

**Before you can enroll**, you must interview with a Culinary Arts faculty member.

### 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-2.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5105

Lead Faculty: 520-206-5164

**Selective Admissions Program:** You are not fully admitted to this program until you have completed an interview. 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 110	Food Service Nutrition .....	2
CUL 115	Food Service Sanitation and Safety .....	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 230	Hot Foods II .....	3
CUL 251	International Cuisine: World of Flavor .....	3
CUL 260*	Bakery and Pastry Production II .....	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

**This certificate is currently under review. See the website or an advisor for details**

Courses focus on culinary management, budgeting, and hands-on food preparation.

**Before you can enroll**, you must interview with a Culinary Arts faculty member.

### 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: 520-206-5105

Lead Faculty: 520-206-5164

**Selective Admissions Program:** You are not fully admitted to this program until you have completed an interview. 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
---------------	--------------	--------------

### Required Core Courses - A grade of C or better is required for graduation.

CUL 101	Principles of Restaurant Operations .....	3
CUL 110	Food Service Nutrition .....	2
CUL 115	Food Service Sanitation and Safety .....	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 180	Food in History .....	3
CUL 185	Catering Operations .....	2
CUL 230	Hot Foods II .....	3
CUL 251	International Cuisine: World of Flavor .....	3
CUL 260*	Bakery and Pastry Production II .....	3
<b>Subtotal .....</b>	<b>34</b>	

### Required Support Courses

Complete nine credits from the following:

ACC 100	Practical Accounting Procedures .....	3
CUL 161	Cake Decorating and Candy Making .....	3
CUL 162	Art of Chocolate .....	1
CUL 163	Sauces .....	3
CUL 199WK	Co-op Work: Culinary Arts .....	1-3
CUL 261*	Advanced Cake Decorating .....	3
<b>Subtotal .....</b>	<b>9</b>	

**Total credits as displayed .....** **62-64**

## 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 degree 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-hygiene/index.html](http://www.pima.edu/programs-courses/credit-programs-degrees/health-professions/dental/dental-hygiene/index.html) when all prerequisites are complete.

**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.
- Show proof of negative TB skin test or negative chest x-ray for TaB.
- Maintain health insurance and a current CPR card at the Health Care Provider Level throughout the program.

### 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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-42.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6661

Lead Faculty: 520-206-6916

**Selective 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.

### Program Prerequisites

Students must have completed the following requirements before they begin the application process:

Appropriate score on the College reading assessment score or completion of REA 112 .....	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 with program prerequisites .....</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>.

**To participate in the clinical portion of the program, the students must:**

1. Obtain an Arizona DPS Fingerprint Clearance Card.
2. Pass a urine toxicology screening exam.
3. 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.
4. Present proof of immunization or immunity for MMR/Varicella/Hep-B, Hep-A, TB and TDap.
5. Show proof of negative TB skin test or negative chest x-ray for TB.
6. 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: 520-206-6661

Lead Faculty: 520-206-6916

**Selective 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.

### Program Prerequisites

Student must have completed the following basic requirements before they may begin the application process.

REA 112* or an appropriate score on the College Reading assessment .....	0-4
MAT 097* with a grade of C or better within the last eight years or Math assessment score at MAT 151 within the last eight or MAT 151 or 167 within the last eight years. ....	0-3
CHM 140/140LB or 140IN*, BIO 201IN*, BIO 202IN*, and BIO 205IN* with a combined average grade of B or better within the last six years. Complete the CHM 130/130LB or 130IN* prerequisite and the BIO 156IN prerequisite as needed. ....	22-26
CSA 100** or CIS/CSA 104** .....	1-3
<b>Subtotal</b> .....	<b>23-36</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 102 fulfill this requirement	
Analysis and Critical Thinking Requirement .....	†
Math and Science program prerequisites fulfill this requirement	
Humanities and Social Science Requirement .....	3
SOC 101 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 .....	†
Core courses fulfill 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**

CMN 102	Introduction to Speech Communication SUN# COM 1100 .....	3
PSY 101	Introduction to Psychology SUN# PSY 1101 .....	4
SOC 101	Introduction to Sociology SUN# SOC 1101 .....	3
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102 .....	3
<b>Subtotal .....</b>		<b>16</b>

**Total credits as displayed with program prerequisites .....** **93.5-106.5**

† 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 100 or 120 can be used to meet program requirements.

# 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: 520-206-6661

Lead Faculty: 520-206-3100

**Selective 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 130/130LB or 130IN and the MAT support course fulfill this requirement.	
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>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.

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>

**Required Support Courses**

CHM 130*/130LB* or CHM 130IN*	Fundamental Chemistry SUN# CHM 1130 .....	5
MAT*	Any course at the 100 or higher level .....	1-4
MGT 124	Small Business Management .....	3
<b>Subtotal</b> .....		<b>9-12</b>
<b>Total credits as displayed</b> .....		<b>68-73</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.

## Complete Dentures Technologist — Certificate for Direct Employment

This accelerated program teaches skills for specialized work in a dental laboratory. It also prepares you to earn certificates in other dental laboratory specialties.

### What can I do with this certificate?

**Career Options:** Work in a dental lab constructing complete dentures. Increase opportunities for employment and promotion within the dental laboratory industry.

**Academic Options:** Pursue a degree in Dental Laboratory Technology AAS. Take classes to earn other specialized certificates.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6661

Lead Faculty: 520-206-3100

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 108*	Laboratory Management** .....	3
<b>Total credits as displayed</b> .....		<b>13</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Please note that DLT 101/101 LB and DLT 108 taken as part of any certificate will satisfy the requirement for subsequent certificates.

## Dental Ceramics Technologist — Certificate for Direct Employment

This accelerated program teaches skills for specialized work in a dental laboratory. It also helps you earn certificates in other dental laboratory specialties.

### What can I do with this certificate?

**Career Options:** Work in a dental lab constructing implants, crowns and other dental ceramic work. Increase opportunities for employment and promotion within the dental laboratory industry.

**Academic Options:** Pursue a degree in Dental Laboratory Technology AAS. Take classes to earn other specialized certificates.

**More Information:** Review program costs, student debt, on-time graduation and more

<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-43.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6661

Lead Faculty: 520-206-3100

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 108*	Laboratory Management**	3
DLT 204/204LB*	Dental Laboratory II	3
DLT 206/206LB*	Dental Ceramics	4
DLT 207/207LB *	Advanced Dental Laboratory Technology	5
<b>Total credits as displayed</b>		<b>18</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* Please note that DLT 101/101 LB and DLT 108 taken as part of any certificate will satisfy the requirement for subsequent certificates.

## Fixed Bridgework Technologist — Certificate for Direct Employment

This accelerated program teaches skills for specialized work in a dental laboratory. It also helps you earn certificates in other dental laboratory specialties.

### What can I do with this certificate?

**Career Options:** Work in a dental lab constructing fixed bridges. Increase opportunities for employment and promotion within the dental laboratory industry.

**Academic Options:** Pursue a degree in Dental Laboratory Technology AAS. Take classes to earn other specialized certificates.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-46.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6661  
 Lead Faculty: 520-206-3100

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 108*	Laboratory Management**	3
DLT 201/201LB*	Dental Laboratory I	3
DLT 202*	Dental Metallurgy	3
DLT 203/203LB*	Fixed Bridgework	4
<b>Total credits as displayed</b>		<b>16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 \*\* Please note that DLT 101/101 LB and DLT 108 taken as part of any certificate will satisfy the requirement for subsequent certificates.

## Partial Dentures Technologist — Certificate for Direct Employment

This accelerated program teaches skills for specialized work in a dental laboratory. It also helps you earn certificates in other dental laboratory specialties.

### What can I do with this certificate?

**Career Options:** Work in a dental lab constructing partial dentures. Increase opportunities for employment and promotion within the dental laboratory industry.

**Academic Options:** Pursue a degree in Dental Laboratory Technology AAS. Take classes to earn other specialized certificates.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-44.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6661

Lead Faculty: 520-206-3100

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 104/104LB*	Dental Occlusion	4
DLT 105/105LB*	Partial Denture Construction	4
DLT 106/106LB*	Orthodontic Appliances	3
DLT 108*	Laboratory Management**	3
<b>Total credits as displayed</b>		<b>17</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

\*\* Please note that DLT 101/101LB and DLT 108 taken as part of any certificate will satisfy the requirement for subsequent certificates.

# 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 — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details**

Prepare for entry level positions in the digital arts. Choose from concentrations in graphic design, desktop publishing or web design.

#### What can I do with this certificate?

**Career Options:** Become a graphic designer, desktop publisher or web designer.

**Academic options:** Pursue an associates degree in Digital Arts.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-12.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6840

Program/Major Codes: **CRTCOMMGRAPH/DAC**

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>		
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 226*	DeskTop Publishing for Digital Arts: Adobe InDesign .....	4
	<b>Subtotal</b> .....	<b>24</b>
<b>Required Support Courses</b>		
Complete 12 credit hours in DAR elective courses above the 100 level (excluding DAR 100, 102, 103, and 120). (Department faculty, advisor or counselor approval is recommended in the selection of the DAR elective courses.)		
	Electives .....	12
	<b>Total credits as displayed</b> .....	<b>42</b>

\*This course has a prerequisite, co-requisite, or recommendation. See course description section.



## Digital Arts — Associate of Applied Science Degree for Direct Employment

**This degree is currently under review. See the website or an advisor for details**

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
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### Required Core Courses - A grade of C or better is required for graduation.

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: .....	20
Department faculty advisor or counselor approval is recommended in the selection of the program concentration.	

**Design** (Concentration Code: DARD)

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)

DAR 140*	Digital Arts Illustration Studio: Illustration Technique and Media	4
DAR 145*	Digital Arts Illustration Studio: Character Development for Animation & Print	4
DAR 222*	Advanced Photo Image Editing: Adobe PhotoShop	4
or DAR 223*	Digital Drawing and Painting	
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 115	Digital Video Editing	4
DAR 222*	Advanced Photo Image Editing: Adobe PhotoShop	4
or DAR 223*	Digital Drawing and Painting	
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 115	Digital Video Editing	4
DAR 222*	Advanced Photo Image Editing: Adobe PhotoShop	4
DAR 252*	Interactive Design I	4
DAR 254*	Interactive Design II	4
DAR 257*	Web Design II	4
<b>Subtotal</b>		<b>20</b>
<b>Total credits as displayed</b>		<b>76</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

### Digital and Film Arts — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details**

Learn to work with various film, digital video, and analog video formats; how to purchase and repair equipment; and how to assess media production needs. Program includes internship opportunities at television stations, production centers, industrial video facilities and audio production studios.

#### What can I do with this certificate?

**Career Options:** Become a media center manager; television/film camera operator, digital video editor or commercial producer; script writer or audio technician.

**Academic Options:** Pursue an Associate’s degree in Digital and Film Arts.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-95.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6690

Lead Faculty: 520-206-6976

Program/Major Codes: **CRTDIGIFILM/MDF/\*\*\*\*** (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>		
DAR 103	Introduction to Digital Arts .....	3
DAR 115	Digital Video Editing .....	4
DAR 124	Writing for Film and Television .....	3
DAR 173	History of American Cinema .....	3
<b>Subtotal</b> .....		<b>13</b>
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete courses from one of the following concentrations: .....		14-15
Department faculty advisor or counselor approval is recommended in the selection of the program concentration, and required for selection of electives.		
<b>Cinematography</b> (Concentration Code: MDFC)		
DAR 175*	Cinematography .....	3
DAR 205*	Lighting for Film and Video .....	4
DAR 215*	Advanced Cinematography .....	4
DAR 217*	Post Production for Film .....	4
<b>Subtotal</b> .....		<b>15</b>
<b>Digital Video Production</b> (Concentration Code: MDFD)		
DAR 125*	Digital Video Production I .....	3
DAR 205*	Lighting for Film and Video .....	4
DAR 225*	Digital Video Production II .....	4
DAR 277*	Film/Video Production Financing .....	3
<b>Subtotal</b> .....		<b>14</b>
<b>Sound Design</b> (Concentration Code: MDFS) <b>This concentration is under review and may be inactivated.</b>		
DAR 177*	Location Sound for Film/Video .....	4
DAR 218*	Introduction to Film Music .....	3
DAR 275*	Basic Audio Production .....	4
DAR 276*	Advanced Audio Production .....	4
<b>Subtotal</b> .....		<b>15</b>
<b>Animation</b> (Concentration Code: MDFA)		
DAR 176	Film Animation .....	3
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>15</b>
<b>Total credits as displayed</b> .....		<b>27-28</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Digital and Film Arts — Associate of Applied Science Degree for Direct Employment

**This degree is currently under review. See the website or an advisor for details**

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 Arts .....	3
DAR 115	Digital Video Editing .....	4
DAR 124	Writing for Film and Television .....	3
DAR 125*	Digital Video Production I .....	3
DAR 173	History of American Cinema .....	3
DAR 175*	Cinematography .....	3
DAR 205*	Lighting for Film and Video .....	4
DAR 215*	Advanced Cinematography .....	4
DAR 217*	Post Production for Film .....	4
DAR 225*	Digital Video Production II .....	4
DAR 275*	Basic Audio Production .....	4
DAR 285*	Documentary Television and Film Production .....	4
<b>Subtotal .....</b>		<b>43</b>

**Required Support Courses**

CSA 100*	Computer Fundamentals .....	1
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102.....	3
Electives	.....	3-4
Select 3-4 credits from the following list: DAR 176, 177, 224, 290E2, 296I8		
<b>Subtotal</b>	.....	<b>10-11</b>
<b>Total credits as displayed</b>	.....	<b>65-66</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.

## Digital and Film Arts Animation — Associate of Applied Science Degree for Direct Employment

**This degree is currently under review. See the website or an advisor for details**

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 Leadership & Ethics category which meets the Cultural Diversity (C) or Global Awareness (G) requirement.	
Computer and Information Literacy Requirement .....	†
CSA 100 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.

DAR 101*	Color Rendering and Theory .....	4
DAR 103	Introduction to Digital 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	Film Animation .....	4
DAR 221*	Photo Image Editing: Adobe PhotoShop .....	4
DAR 222*	Advanced Photo Image Editing: Adobe PhotoShop .....	4
DAR 223*	Digital Drawing and Painting .....	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>54</b>

### Required Support Courses

CSA 100*	Computer Literacy .....	1
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102 .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits as displayed</b> .....		<b>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.

## 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

**This degree is currently under review. See the website or an advisor for details**

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
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**Required Core Courses - A grade of C or better is required for graduation.**

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>

**Core Concentrations - A grade of C or better is required for graduation.**

Complete courses from one of the following concentrations: ..... 27-31  
 Department faculty or advisor approval is recommended.

**Digital Programming** (Concentration Code: DAGP)

CIS 129*	Programming and Problem Solving I .....	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>27-30</b>

**Digital Animation and Production** (Concentration Code: DAGA)

ART 213*	Life Drawing I .....	3
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>31</b>

**Total credits as displayed .....** **62-66**

† 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.

\*\* Physics is recommended.

\*\*\* ART 100 or 110 is recommended.

# Direct Care Professional

## 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</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 Education and Child Development Associate

Prepare to care for children, birth through age eight, by learning theories and skills to best support young children's growth and development.

### Basic Early Childhood Studies — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

Learn fundamental concepts in Early Care and Education. Courses focus on child development, learning and culture as well as teaching techniques, observation, and curriculum.

#### 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), apply for a position working with young children, or use the coursework to meet the state Department of Health Service 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-18.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Center for Early Childhood Studies: 520-206-5245

Dean: 520-206-5098

Lead Faculty: 520-206-5107

Program/Major/Concentration Codes: **CRTECB/ECB/\*\*\*\*** (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>		
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
ECE 115*	Supervision and Administration of Early Childhood Programs .....	3
<b>Subtotal</b> .....		<b>9</b>
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete one of the following Concentrations: .....		7
<b>Child Development Associate Credential (CDA) Preparation (Concentration Code: ECBC)</b>		
CDA 229	Child Development Associate Assessment Preparation .....	3
Electives:	Complete 4 credits from ECE and/or CDA courses.....	4

<b>Subtotal</b> .....	<b>7</b>
<b>Early Childhood Foundations Concentration</b> (Concentration Code: ECBF)	
ECE 117 Child Growth and Development .....	3
Electives: Complete 4 credits from ECE and/or CDA courses.....	4
<b>Subtotal</b> .....	<b>7</b>
<b>Total credits as displayed</b> .....	<b>16</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## 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.

### 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), 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-7.html>

**Location:** Desert Vista Campus

**Department/Contact Information:**

Center for Early Childhood Studies: 520-206-5245

Dean: 520-206-5098

Lead Faculty: 520-206-5107

Program/Major Codes: **CRTECA/ECA**

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 (was ECE 200) (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 (was ECE 110) .....	3
ECE 292*	Early Childhood Education: Theory to Practice (was ECE 190) .....	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 four-year university should pursue the Early Childhood Education or Elementary Education AA degree.

### 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 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:**

Center for Early Childhood Studies: 520-206-5245

Dean: 520-206-5098

Lead Faculty: 520-206-5107

Program/Major Codes: **AASECS/ECS**

### 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 for Transfer

Learn how to effectively teach young children while preparing to transfer to a four-year degree program.

### 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 four-year degree program in early childhood education/elementary education.

**Location:** Desert Vista Campus.

**Department/Contact Information:**

Center for Early Childhood Studies: 520-206-5245

Dean: 520-206-5098

Lead Faculty: 520-206-5107

Program/Major Codes: **AOAECE/ECE**

### 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 the 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.

ECE 117*	Child Growth and Development .....	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 (was ECE 110) .....	3
ECE 292*	Early Childhood Education: Theory to Practice (was ECE 190) .....	4
<b>Subtotal .....</b>		<b>16</b>

### Required Support Courses

ART 105	Exploring Art and Visual Culture .....	3
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**History:**

Complete both courses .....

HIS 101 Introduction to Western Civilization I

HIS 141 History of the United States I

**Life Science:**

BIO 105IN Environmental Biology .....

**Earth/Space Science or Physical Science:**

Choose one of the following: .....

AST 101IN Solar System

AST 102IN Stars, Galaxies, Universe

CHM 121/121LB

or CHM 121IN Chemistry and Society I

*continued next page*

CHM 130*/130LB*	Fundamental Chemistry	SUN# CHM 1130
or CHM 130IN*		
CHM 151*/151LB*	General Chemistry I	SUN# CHM 1151
or CHM 151IN*		
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 121*/121LB*	Introductory Physics I	SUN# PHY 1111
or PHY 121IN*		

**Mathematics:**

Complete all three courses.....	9
MAT 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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**Elementary Science:**

SCT 280*	Process of Science for Elementary Educators I .....	3
SCT 281*	Process of Science for Elementary Educators II .....	3

**Social and Behavioral Science:**

GEO 103	Cultural Geography .....	3
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**Speech Communication or Language**.....

Students planning to attend ASU or NAU may complete CMN 102 or CMN 110 or a language course; students planning to attend the UA must complete one of the following: CHI 202, FRE 202, GER 202, JPN 202, ASL 202, SPA 202, or SPA 203.	3-5
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**Subtotal** ..... **41-44**

**Total credits as displayed** ..... **63-66**

† 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.

## K-12 Education

Prepare to become an elementary or secondary school teacher.

Students who plan to teach in elementary school should pursue the **Elementary Education Associate of Arts degree**; those who wish to teach secondary school should pursue an Associate of Arts. All students will need to complete an education degree at a 4-year college or university before becoming a teacher.

Students who have already earned a bachelor's degree in any discipline can 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 with a concentration in Early Childhood or Elementary Education 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 four-year elementary education degree program. 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.

Program/Major/Concentration Codes: **AOAEDUCATION/EDU/\*\*\*\*** (see concentration codes below)

**Department/Contact Information:**

Lead Faculty: 520-206-5313

#### 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 202	Introduction to the Exceptional Learner .....	3
<b>Subtotal</b> .....		<b>3</b>

#### Required Support Courses

ART 105	Exploring Art and Visual Culture .....	3
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#### History:

Complete both courses .....

HIS 101 Introduction to Western Civilization I .....

HIS 141 History of the United States I .....

#### Life Science:

BIO 105IN Environmental Biology .....

#### Earth/Space Science or Physical Science:

Choose one of the following: .....

AST 101IN Solar System .....

AST 102IN	Stars, Galaxies, Universe	
CHM 121/121LB or CHM 121IN	Chemistry and Society I	
CHM 130*/130LB* or CHM 130IN	Fundamental Chemistry SUN# CHM 1130	
CHM 151*/151LB* or 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 121*/121LB* or PHY 121IN*	Introductory Physics I SUN# PHY 1111	
<b>Elementary Science:</b>		
SCT 280*	Process of Science for Elementary Educators I	3
SCT 281*	Process of Science for Elementary Educators II	3
<b>Mathematics:</b>		
Complete all three courses:		9
MAT 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	
<b>Civics and Government:</b>		
POS 210	National and State Constitutions	3
<b>Social and Behavioral Science:</b>		
GEO 103	Cultural Geography	3
<b>Subtotal</b>		<b>38-39</b>

### Core Concentrations - A grade of C or better is required for graduation.

Complete one of the following concentrations:		15-21
<b>Elementary Education</b> (Concentration Code: EDUL)		
EDU 200*	Introduction to Education	3
EDU 201	Diversity in Education	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, GRK 202, ITA 202, JPN 202, LAT 202, SPA 202 or 203		
<b>Subtotal</b>		<b>15-17</b>

### Early Childhood Education (Concentration Code: EDUC)

(This option is for students planning to transfer to UA South for the B.S. in Elementary Education, as well as the Early Childhood Education Endorsement. This concentration requires more credits than a typical transfer degree due to the additional state-mandated endorsement coursework.)		
ECE 117	Child Growth and Development	3
ECE 118	Foundations of Early Childhood in Education (was ECE 200) (only if taken after Summer 2014)	3
ECE 228*	The Young Child: Family, Culture and Community	3
ECE 240*	Assessment of Young Children	3
ECE 292**	Early Childhood Education: Theory to Practice (was ECE 190)	4
Second Language		4-5
Completion of a Language course numbered 102*, second semester level.		
<b>Subtotal</b>		<b>20-21</b>
<b>Total credits as displayed</b>		<b>62-69</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.

\*\* Students may request a waiver for the ECE 292 requirement provided one year of full-time early childhood (pre-K and/or Kindergarten) experience can be documented.

## Education — Elementary or Secondary Certification — Post-Degree Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

Prepare for Arizona teacher certification with this post-degree program. Learn from field-intensive, standards-based courses, as well as from a supervised and directed internship. Complete this program by taking classes exclusively online.

Program Prerequisites: Before you can enroll, you must earn a bachelor's degree and meet additional admission requirements. Additional information on admission, course availability, program phases and more is available online.

### What can I do with this certificate?

**Career Options:** Elementary or secondary school teacher.

**Academic Options:** Continue your education with post-graduate work in education or a subject discipline.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Lead Faculty: 520-206-5313

**Selective 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>Core - A grade of C or better 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
EDC/ESE 257	21st Century Learning .....	3
POS 210**	National and State Constitutions.....	3
<b>Subtotal</b> .....		<b>15</b>
<b>Methods Courses:</b>		
EDC 286	Structured English Immersion Methods (Completion).....	3
<b>Subtotal</b> .....		<b>3</b>
<b>Core Total</b> .....		<b>18</b>

### Core Options: A grade of C or better is required for graduation.

Choose one of the following options:

#### Elementary Concentration

##### Foundations:

EDC 254	Classroom Management Elementary.....	3
EDC 262	Practicum 1: Elementary.....	2
<b>Subtotal</b> .....		<b>5</b>

##### Methods:

EDC 263	Practicum 2: Elementary.....	2
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
EDC 291	Student Teaching: Elementary .....	8
<b>Subtotal</b> .....		<b>25</b>

<b>Elementary Concentration Total</b> .....		<b>30</b>
<b>Elementary Teacher Program Total</b> .....		<b>48</b>



**Secondary Concentration****Foundations:**

EDC 256	Classroom Management Secondary.....	3
EDC 264	Practicum 1: Secondary.....	2
<b>Subtotal</b>		<b>5</b>

**Methods:**

EDC 265	Practicum 2: Secondary.....	2
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
EDC 292	Student Teaching: Secondary.....	8

**Subtotal** ..... **16**

**Secondary Concentration Total** ..... **21**

**Secondary Teacher Program Total** ..... **39**

\* 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 advisor for additional information.

## Special Education Mild-Moderate Disabilities Certification — Post-Degree Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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, 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.

**Program Prerequisites:** Before you can enroll, you must earn a bachelor's degree and meet additional admission requirements.

### What can I do with this certificate?

**Career Options:** Special Education K-12 Teacher.

**Academic Options:** Continue your education with post-degree work in education or pursue other specialized endorsements offered by Pima.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5098

Lead Faculty: 520-206-5313

**Selective 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
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### Required Courses – Must be completed with grades of C 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
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>

**Methods:**

ESE 260	Practicum 1: Mild-Moderate Disabilities	2
ESE 261	Practicum 2: Mild-Moderate Disabilities (F-Sp)	2
ESE 270	Methods of Instruction: Students/Mild-Moderate Disabilities (F-Sp)	3
ESE 271*	Mild-Moderate Methods: K-12 Inst. Across the Curriculum (Su)	3
ESE 272*	Developmental Reading, Instruction, Assessment, Remediation (Su)	3
ESE 273	Diagnosis and Assessment of Mild-Moderate Disabilities (F-Sp)	3
ESE 290	Student Teaching: Mild-Moderate Disabilities (F-Sp)	8
<b>Subtotal</b>		<b>24</b>

**Required Support Courses**

EDC 286***	Structured English Immersion Methods	3
POS 210**	National and State Constitutions	3
<b>Subtotal</b>		<b>6</b>
<b>Total credits as displayed</b>		<b>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 advisor for additional information.

\*\*\* This course is not required if an SEI Endorsement is displayed on the student's teaching certificate.

## Special Education Mild-Moderate Disabilities Certification for Certified Teachers — Post-Degree Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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.

**Program Prerequisites:** Before you can enroll, you must earn a bachelor's degree and meet additional admission requirements.

### What can I do with this certificate?

**Career Options:** Special Education K-12 Teacher.

**Academic Options:** Continue your education with post-degree work in education or pursue other specialized endorsements offered by Pima.

**Location:** Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5098

Lead Faculty: 520-206-5313

**Selective 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 Courses – Must be completed with grades of C or higher. A program GPA of 3.0 or higher is required for graduation.</b>		
<b>Foundations:</b>		
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 260	Practicum 1: Mild-Moderate Disabilities .....	2
ESE 261	Practicum 2: Mild-Moderate Disabilities .....	2
ESE 270	Methods of Instruction: Students/Mild-Moderate Disabilities .....	3
ESE 271*	Mild-Moderate Methods: K-12 Inst. Across the Curriculum .....	3
ESE 272*	Developmental Reading, Instruction, Assessment, Remediation .....	3
ESE 273	Diagnosis and Assessment of Mild-Moderate Disabilities .....	3
ESE 290	Student Teaching: Mild-Moderate Disabilities .....	8
<b>Subtotal</b> .....		<b>24</b>

**Required Support Courses**

EDC 286***	Structured English Immersion Methods .....	3
POS 210**	National and State Constitutions .....	3
<b>Subtotal</b> .....		<b>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 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.

\*\*\* This course is not required if an SEI Endorsement is displayed on the student's teaching certificate.

# 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.
- Appropriate placement score 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

**Selective 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 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:

- A. 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
- B. 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
- C. Documentation of being 18 years old.
- D. Appropriate placement score on the College Reading Assessment test.
- E. For Paramedic courses, successful completion of a minimum of 24 contact hours of hazardous materials training that meets the requirements of the National Fire Protection Association's NFPA 472: Standard for Professional Competence of Responders to Hazardous Materials Incidents, 1997 Edition; Competencies for First Responders at the Operations Level, is required.
- F. Current health insurance coverage. This coverage must remain current throughout the course of training and the certification process.
- G. 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
- H. Provide proof of immunity or immunization for the following:
  - a. 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.
  - b. Measles (Rubeola)/Mumps/Rubella.
  - c. Tetanus/Diphtheria within the last 10 years.
  - d. Results of serological testing showing Hepatitis B (HBV) immunization, begin HBV vaccination series, or sign the release of liability claims/declination form.
- I. Successfully Screen for the following areas:
  - a. ALS written exam
  - b. Oral Board screening
  - c. 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

**Selective 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 .....	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.**

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
or EMT 243*	Emergency Pediatric Care (EPC) Initial	
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.

\*\* Contact the department at 206-6569 for course offerings.

# Engineering

## Engineering—Associate of Science Degree for Transfer

**This degree is currently under review. See the website or an advisor for details.**

Students who wish to transfer to an Arizona university and pursue a major in Engineering should complete the PCC Associate of Science degree for transfer (refer to university major guides for core or elective courses and language requirements.)

### What can I do with this degree?

**Academic Options:** Transfer to a university to complete a bachelor's degree in Engineering\*\*.

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6763

Lead Faculty: 520-206-6679

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 CHM 151 & 152 and their labs or PHY 210 & 216 and their labs, or BIO 181 & 182 and their labs, 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
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### Required Core Courses: A grade of C or better is required in all courses for graduation.

BIO 181IN* and BIO 182IN* OR CHM 151/151LB or 151IN* and CHM 152/152LB or 152IN* OR PHY 210/210LB or 210IN* and PHY 216/216LB or 216IN* MAT 220* Calculus I	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 SUN# MAT 2220	8-10
Major/Electives .....		21-25
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.

\*\* ASU: <https://engineering.asu.edu/advising/>; NAU: <https://nau.edu/cefns/engineering/>; UA: <http://www.advising.arizona.edu> or <http://engineering.arizona.edu>

# 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 I .....	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.

### 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-25.html>

**Location:** Community Campus

**Department/Contact Information:**  
 Dean/Lead Faculty: 520-206-6350

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program you must fulfill the following requirement:

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.

### Required Core Courses - A grade of C or better is required for graduation.

FSC 101	Principles of Emergency Services .....	3
FSC 110	Rope I .....	1
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 167	Rescue Practices for the Fire Service .....	2.5
FSC 173*	Records and Reports .....	1
<b>Total credits as displayed .....</b>		<b>22.5</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

Learn firefighting skills, 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.

### What can I do with this degree?

**Career Options:** Seek employment or increase promotional opportunities in the fire service.

**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:** Community Campus

**Department/Contact Information:**

Dean/Lead Faculty: 520-206-6350

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program, you must fulfill the following 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.

### 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
STU/MGT 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>

### Required Core Courses - A grade of C or better is required for graduation.

FSC 101	Principles of Emergency Services .....	3
FSC 120	Fire Behavior and Combustion .....	3
FSC 123*	Building Construction Related to the Fire Service .....	3
FSC 124*	Fire Prevention .....	3
FSC 126*	Fire Protection Systems in the Fire Service .....	3
FSC 127	Principles of Emergency Services Safety and Survival .....	3
<b>Subtotal .....</b>		<b>18</b>

### Required Support Courses

STU/MGT 230	Dynamics of Leadership .....	3
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102 .....	3
CSA 100	Computer Literacy .....	1
<b>Subtotal .....</b>		<b>10</b>

**Core Concentrations - A grade of C or better is required for graduation.**

Complete one of the following concentrations:

**Fire and Emergency Service Higher Education (FESHE) (Concentration Code: FSCF)**

FSC 125	Fire Protection Hydraulics and Water Supply	3
FSC 174*	Fire Investigation I	3
FSC 230*	Fire Investigation II	3
FSC 249*	Occupational Safety and Health for Emergency Services	3
FSC 250*	Principles of Fire and Emergency Service Administration	3
FSC 251*	Hazardous Materials Chemistry	3
FSC 252*	Fire Service Strategy and Tactics	3
FSC 253*	Legal Aspects of Emergency Services	3
<b>Subtotal</b>		<b>24</b>

**Vocational Academy (Concentration Code: FSCV)**

Complete 27 credits from any of the fire science course offerings listed below or the FESHE courses listed above:

FSC 110	Rope I	1
FSC 111	Rope II	1
FSC 112*	Rope III	1
FSC 116*	Confined Space I for First Responders	1
FSC 117*	Confined Space II for First Responders	1
FSC 118*	Swift Water Rescue for First Responders	1
FSC 121*	Trench Rescue for First Responders	1
FSC 122*	Structural Collapse Rescue for First Responders	1
FSC 130	Strength and Fitness for Fire Science	2.5
FSC 149	Fire Operations I	4
FSC 150*	Fire Operations II	4
FSC 153	Hazardous Materials	1.5
FSC 154*	Advanced Fire Prevention	3
FSC 160	Wildland Firefighting	3
FSC 163*	Fire Apparatus and Equipment	3
FSC 168*	Special Hazard Tactical Problems	3
FSC 170*	Fire Science Leadership	3
or FSC 170A*	Fire Science Leadership I	1
and FSC 170B*	Fire Science Leadership II	1
and FSC 170C*	Fire Science Leadership III	1
FSC 173*	Records and Reports	1
FSC 180*	Driver Training for Fire Science	3
FSC 189*	Current Issues in Fire Science	2
FSC 260*	Fire and Emergency Services Instructor I	2
FSC 261*	Fire and Emergency Services Instructor II	2
FSC 270*	Leadership I for Fire Services Executives	1
FSC 271*	Leadership II for Fire Services Executives	1
FSC 272*	Leadership III for Fire Services Executives	1
FSC 273*	Leadership IV for Fire Services Executives	1
FSC 274*	Leadership V for Fire Services Executives	1
FSC 275*	Leadership VI for Fire Services Executives	1
FSC 280	Fire Chief Preparation	4
<b>Subtotal</b>		<b>27</b>
<b>Total credits as displayed</b>		<b>61-64</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.

# 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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-8.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* or FSS 285*	Coaching Techniques and Practices .....	3
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 finger printing. 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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-22.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* or FSS 234A & 234B*	Fundamentals of Exercise Science .....	4
FSS 236*	Communication and Exercise Adherence .....	2
FSN 154	Nutrition .....	3
or FSS 241*	Nutrition for Exercise and Sport .....	3
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>

<b>Required Support/Elective Courses</b>		
Select 6 credits from the following list:		
FAW 182	Healthy Living and Wellness .....	3
FAW 183	Lifestyle Wellness Coaching .....	2
FAW 184	Healthy, Wellness, and Physical Activity .....	3
FSS 238*	Introduction to Sports Injury Management .....	3
FSS 260*	Business Practices for the Personal Trainer .....	3
FSS 262*	Personal Trainer: Special Populations .....	2
FSS 270*	Advanced Principles for Athletic Conditioning .....	1
FSS 271*	Sport Psychology .....	3
FSS 273*	Sport Physiology .....	3
FSS 280*	Lifestyle and Weight Management Consultant .....	1
FSS 291*	Fitness and Sport Sciences Internship .....	3-4
<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.

## 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.

# Fraud Examination

## Fraud Examination — Post-Degree Certificate for Direct Employment

An introduction to fraud examination principles for the fraud examination. Applicants for this certificate should be an Associate Member of the Association of Certified Fraud Examiners (CFE) in good standing. See the Association of Certified Fraud Examiners (ACFE) web site for examination requirements, which include minimum academic and professional requirements at [www.acfe.com](http://www.acfe.com).

### What can I do with this certificate?

**Career Options:** Enhance your opportunity for advancement in several career fields including accounting, business, law enforcement, and loss prevention upon successful completion of the Certified Fraud Examiner (CFE) examination.

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7216

**Selective 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
Required Core Courses - A grade of C or better is required for graduation.		
ACC 211*	Financial Accounting ( <i>was ACC 101</i> ) SUN# ACC 2201	3
ACC 260*	Principles of Fraud Examination	3
AJS 201	Rules of Evidence	3
BUS 148	Ethics in the Workplace	3
CIS 132	Introduction to Computer Forensics	4
FIN 217*	Analyzing Financial Data	1
<b>Total credits as displayed</b>		<b>17</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# 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>

Course Number	Course Title	Credit Hours
<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>

# Geology

Study the earth – its processes, materials, history and effect on humans and life – by taking courses in geology that focus on physical geology, historical geology, geological processes, oceanography and more. Students learn through a combination of lecture, hands-on lab experiences, and field trips.

**Geology courses are offered as part of the requirements of the Associate of Science degree**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU, or UA should meet with geology faculty or an advisor to plan their course of study using the appropriate transfer guide.

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## *What can I do with my studies in geology?*

**Career options:** Work as a technician in laboratories, with geophysical surveying firms, in the petroleum industry, government, and technical service firms.

**Academic options:** Continue studies towards a bachelor of science in geology, geosciences, geological engineering, engineering, or education.



# Health Information Management

## Health Information Technology — Associate of Applied Science for Direct Employment

**This degree is currently under review. See the website or an advisor for details.**

Prepare for a career as a medical billing and coding specialist or other HIT professional.

### 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: 520-206-7134

Lead Faculty: 520-206-7186

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. 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 . . . . .	†
	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 . . . . .	4
HIT 108	Health Information Employment Policies . . . . .	1
HIT 112*	Health Insurance and Medical Billing . . . . .	3
HIT 125	Pathophysiology and Pharmacology for Health Information Technology . . . . .	4
HIT 150	Introduction to Health Management Information Systems . . . . .	3
HIT 175	Health Information Statistics and Research . . . . .	4
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	Health Management Information Systems . . . . .	3
HIT 290*	Health Information Technology Internship . . . . .	3
<b>Subtotal</b>		<b>46</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*	Writing I .....	3
WRT 102*	Writing II .....	3
<b>Subtotal</b> .....		<b>15</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>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.

## Health Information Technology — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-70.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134

Lead Faculty: 520-206-7186

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

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 .....	4
HIT 108	Health Information Employment Policies .....	1
HIT 125	Pathophysiology and Pharmacology for HIT .....	4
<b>Subtotal</b> .....		<b>16</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*	Health Information Technology Internship .....	3
<b>Subtotal</b> .....		<b>12</b>

**Medical Front Office Support** (Concentration Code: OAHF)

CSA 110*	Spreadsheets: Microsoft Excel	3
CIS 120*	Computer Applications for Business SUN# CIS 1120	4
HIT 211*	Medicolegal Aspects in Health Information Management	3
HIT 225 or HIT 290*	Health Management Information Systems Health Information Technology Internship	3
<b>Subtotal</b>		<b>13</b>

**Health Information Management** (Concentration Code: OAHM)

HIT 150	Introduction to Health Management Information Systems	3
HIT 175	Health Information Statistics and Research	4
HIT 210*	Medical Quality Assurance and Supervision	3
HIT 225 or HIT 290*	Health Management Information Systems Health Information Technology Internship	3
<b>Subtotal</b>		<b>13</b>
<b>Total credits as displayed with program prerequisites</b>		<b>28-29</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# History Concentration – 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.

History courses are offered as part of the requirements of the **Associate of Arts in Liberal Arts degree**, or may be taken as required or elective courses to complete other degrees. Students planning to transfer to a university to major in history should complete this history concentration\* as part of completing the **Associate of Arts in Liberal Arts degree**, including the **AGEC-A**. Students should meet with a history faculty member, an advisor, or a counselor to plan their course of study using the appropriate major guide.

Please note that one or two of the History concentration courses below may also fulfill AGEC-A general education requirements of the Associate of Arts in Liberal Arts. See an advisor or counselor.

**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**

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation.</b>		
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 .....	3
or HIS 141HC	United States History I: Honors	
HIS 142	United States History II .....	3
or HIS 142HC	United States History II: Honors	
HIS 160	Latin America Before Independence .....	3
<b>Total Credits as displayed.....</b>		<b>15*</b>

\* To be awarded this concentration you must complete the course requirements above and the Associate of Arts in Liberal Arts with an AGEC-A.

# Histotechnology

## Histotechnician—Associate of Applied Science Degree for Direct Employment

Learn techniques and theory of histotechnology for immediate employment and licensure. Gain internship experience in both research & development and a clinical laboratory. This program is based on the requirements of the National Accrediting Agency for Clinical Laboratory Sciences. Complete this program, including prerequisites, in five semesters. HTP courses are only offered in 8 week formats.

### What can I do with this degree?

**Career Options:** Take the American Society of Clinical Pathologists licensure exams. Assist pathologists and dermatologists in hospitals and private practice, or work in industrial or academic research and 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 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: 520-206-2180

Lead Faculty: 520-206-2299

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Program Prerequisites - Complete the following courses with a grade of "C" or better before enrolling in this program:</b>		
BIO 156IN	Introduction to Biology Allied Health or passing grade on Biology Assessment Exam .....	0-4
BIO 201IN *	Human Anatomy and Physiology I .....	4-5
or BIO 201IH*	Human Anatomy, Physiology and Histology	
BIO 202IN*	Human Anatomy and Physiology II .....	4
BIO 205IN*	Microbiology .....	4
CHM 130IN*	Fundamental Chemistry .....	5
MAT 097 or higher	Intermediate Algebra or Math assessment score into MAT 151 or higher .....	0-3
REA 091*	Reading Improvement II or Reading assessment into REA 112 or higher .....	0-4
<b>Subtotal</b> .....		<b>17-29</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 .....	†
CMN 120 and WRT 154 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	†
MAT 097 and BIO 201IN or BIO 201IH fulfill this requirement.	
Humanities and Social Science Requirement .....	6
Computer and Information Literacy Requirement .....	†
CSA 100 fulfills this requirement.	
Special Requirement***	
CMN 120 fulfills the C or G requirement.	
<b>Subtotal</b> .....	<b>6†</b>

### Required Core Courses: A grade of C or better is required for graduation.

BIO 112*	Bioscience Laboratory Fundamentals .....	3
HIT 105	Medical Terminology .....	4
HTP 101*	Histology .....	4
HTP 105*	Histotechniques I .....	4

HTP 200*	Histotechniques II .....	4
HTP 201*	Histotechniques III .....	4
HTP 202*	Histotechniques IV .....	3
HTP 291*	Internship to Histotechnology .....	5
<b>Subtotal</b> .....		<b>31</b>

**Required Support Courses: A grade of C or better is required for graduation.**

CMN 120**	Business and Professional Communications .....	3
CSA 100*	Computer Literacy .....	1
WRT 154**	Career Communications .....	3
<b>Subtotal</b> .....		<b>7</b>
<b>Total credits</b> .....		<b>61-73</b>

† Support course(s) or prerequisites 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.

\*\* WRT 101 and WRT 102 may be substituted for CMN 120 and WRT154.

\*\*\* If CMN 120 is not completed, the C or G requirement must be met by completing a C or G course found in the General Ed Section.

# 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:

- 1.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
- 1.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.
2. Complete HON 101: Honors Colloquium with a grade of B or better.

**Selective 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*	Writing I: Honors .....	3
WRT 102HC*	Writing 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/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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-73.html>

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-2216

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>		
HRM 101	Front Office Procedures .....	3
HRM 110	Food Service Systems Management .....	3
HRM 111*	Commercial Food .....	3
HRM 150	Hospitality Property Management .....	3
<b>Subtotal</b> .....		<b>12</b>
<b>Total credits as displayed</b> .....		<b>24</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: 520-206-2180

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 200 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 200*	Basic Economic Principles .....	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, 102*, 201* or 202*	
	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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-74.html>

**Location:** Community Campus

**Department/Contact Information:**

Dean: 520-206-6424

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:** Review program costs, student debt, on-time graduation and more

<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-24.html>

**Location:** Public Safety and Emergency Services Institute.

#### Department/Contact Information:

Director: 520-206-6484

Lead Faculty: 520-206-3963

**Selective 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>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.

### 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

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### 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.)

### 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
<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>Required Support Courses</b>		
AJS 101	Introduction to Administration of Justice Systems .....	3
AJS 225	Criminology .....	3
<b>Subtotal .....</b>		<b>6</b>
<b>Total .....</b>		<b>69-71</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

## Literature

Explore the world's literature by taking classes focusing on world, British and American writers including their novels, poetry, plays and more.

Literature courses are offered as part of the requirements of the **Associate of Arts degree**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU or UA should meet with literature faculty or an advisor to plan their course of study using the appropriate major guide.

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### *What can I do with my studies in literature?*

**Academic Options:** Continue studies towards a bachelor of arts in English, education or other humanities disciplines.

# Machine Tool Technology

Gain skills and experience needed for employment as a machinist.

## Machine Tool Technology — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-40.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 74. <i>NOTE:</i> 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>Machine Operator</b> (Concentration Code: MACO)		
General Education - <i>not required</i> for this concentration		
<b>Concentration Core Course – A grade of C or better is required for graduation</b>		
MAC 130*	Machine Setup and Fixture Making .....	3
<b>Subtotal</b> .....		<b>3</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>20</b>

**Manual Machinist** (Concentration Code: MACM)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 130*	Machine Setup and Fixture Making	3
MAC 275	Applied Metallurgy	4
<b>Subtotal</b>		<b>11</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>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
<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 .....		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
<b>Required Core Courses - A grade of C or better is required for graduation.</b>		
MAC 100	Introduction to Machine Tool .....	3
MAC 110	Manual Machine Shop .....	4
MAC 275	Applied Metallurgy .....	4
<b>Subtotal</b> .....		<b>11</b>

<b>Required Support Courses</b>		
Course Number	Course Title	Credit Hours
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.**

Complete one of the following concentrations (options):

Department chair or faculty advisor approval is recommended in the selection of the core concentration and technical electives.

**Machine Operator** (Concentration Code: MACO)

MAC 130*	Machine Setup and Fixture Making .....	3
ELEC Technical Electives .....		27
Complete 27 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, MAT, WLD.		
<b>Subtotal</b> .....		<b>30</b>

**Manual Machinist** (Concentration Code: MACM)

MAC 125*	Mechanical Inspection .....	4
MAC 130*	Machine Setup and Fixture Making .....	3
ELEC Technical Electives .....		23
Complete 23 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, MAT, WLD.		
<b>Subtotal</b> .....		<b>30</b>

**Mechanical Inspector** (Concentration Code: MACI)

MAC 125*	Mechanical Inspection .....	4
ELEC Technical Electives .....		26
Complete 26 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, MAT, WLD.		
<b>Subtotal</b> .....		<b>30</b>

**Computer Numerical Control (CNC) Machinist** (Concentration Code: MACC)

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
ELEC Technical Electives .....		14
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, MAT, WLD.		
<b>Subtotal</b> .....		<b>30</b>

**Computer Numerical Control (CNC) Programmer** (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
ELEC Technical Electives .....		6
Complete 6 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, MAT, WLD		
<b>Subtotal</b> .....		<b>30</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 second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

# Mathematics

## Associate of Arts Degree for Transfer in Liberal Arts

**A student planning to obtain a mathematics degree should follow the Associate of Arts Degree for Transfer in Liberal Arts.** Meet with a mathematics faculty or an advisor to plan courses. The student who plans to transfer to a college or university to complete his/her bachelor's degree should also contact an advisor or counselor from their chosen school for verification of transfer courses.

**Information:** All students enrolling in their first mathematics course with the College and all new, full-time students are required to take the mathematics assessment tests. Completion of prerequisite courses within the last 3 years with a grade of C or better or a satisfactory score on the assessment test is required for all math courses.

Program Identification Code: **AOALIBRALART**

# Medical Assistant

## Medical Assistant — Certificate for Direct Employment

**This certificate is currently under review. See the website or an advisor for details.**

Learn advanced skills in patient care and prepare to take exams for licensure. Concentrations can be in either the front or back office, or for the full medical assistant who has training in both environments.

**Before enrolling in this program,** students must take the College Reading, Math and Writing assessments.

- Students must also present evidence they have earned first aid/CPR certification from a recognized training provider.

### What can I do with this certificate?

**Career Options:** Upon completion of this certificate, students are eligible to take the American Medical Technologist Exam (AMT) for Medical Assistants or the Registered Medical Assistant Exam (RMA). Work as a Medical Assistant in physicians’ offices, medical centers, urgent care facilities, and clinics.

**Academic Options:** Take courses to qualify as a medical coding and billing specialist or practical nurse.

**More Information:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-96.html>

Location: Desert Vista Campus

**Department/Contact Information:**

Dean: 520-206-5142  
 Lead Faculty: 520-206-5142

**Selective 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>		
HCA 119	Human Anatomy and Physiology for Health Care	2
MDA 120	Medical Assistant Profession	2
MDA 121	Medical Assistant Skills for Success	2
MDA 124	Medical Terminology for Health Care Workers	2
<b>Subtotal</b>		<b>8</b>
<b>Core Concentrations - A grade of C or better is required for graduation.</b>		
Complete one or more of the following concentrations:		9-10
<b>Administrative Medical Assistant (Concentration Code: HPMA)</b>		
MDA 125*	Orientation to ICD-9 Coding	3
MDA 126	Medical Billing and Insurance for Medical Assistants	3
MDA 127	Administrative Procedures for Medical Assistants	3
MDA 190A*	Medical Assistant Front Office Externship	1
<b>Subtotal</b>		<b>10</b>
<b>Clinical Medical Assistant (Concentration Codes: HPMC)</b>		
HCA 103	Orientation to Pharmacology	3
MDA 122	Medical Assistant Clinical Care	2
MDA 123	Medical Assistant Clinical Procedures	3
MDA 190B*	Medical Assistant Back Office Externship	1
<b>Subtotal</b>		<b>9</b>
<b>Total credits as displayed</b>		<b>17-18</b>

# 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 program prerequisites (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: 520-206-6763

**Selective 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.

**Program Prerequisites**

Students must have completed the following prerequisites before they may begin the application process.

Appropriate reading assessment score or completion of REA 112. ....	0-4
MAT 151* College Algebra .....	§
CHM 151/151LB* or 151IN* and CHM 152/152LB* or 152IN* with a combined average grade of B or better within the last seven years. NOTE: The average may be met with a grade of C in one course and a grade of A in the other. ....	§
Completion of BIO 201IN* and BIO 202IN* with a combined average grade of B or better within the last seven years. Note: The average may be met with a grade of C in one course and a grade of A in the other. Complete the BIO 156IN prerequisite as needed. ....	§-4
BIO 205IN* Microbiology with a grade of B or better. ....	§
<b>Subtotal</b> .....	<b>0-8</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 CMN 120 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	†
MAT 151 and BIO 201IN 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>

<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 250	Biomedical Ethics .....	3
MLT 101*	Phlebotomy for Medical Laboratory Technology .....	3
MLT 199*	Introductory Co-op: Phlebotomy Lab Assisting .....	1
MLT 199WK*	Introductory Co-op Work: Phlebotomy Lab Assisting .....	1.25
MLT 200	Urinalysis/Body Fluids .....	3
MLT 211	Hematology .....	5
MLT 221	Clinical Chemistry .....	4
MLT 231	Immunohematology/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 .....	8
<b>Subtotal</b> .....		<b>42.25</b>

**Required Support Courses - A grade of C or better is required for graduation.**

BIO 201IN*	Human Anatomy and Physiology I SUN# BIO 2201 .....	4
BIO 202IN*	Human Anatomy and Physiology II SUN# BIO 2202 .....	4
BIO 205IN*	Microbiology SUN# BIO 2205 .....	4
CHM 151/151LB or 151IN*	General Chemistry I .....	5
	General Chemistry I SUN# CHM 1151	
CHM 152/152LB or 152IN*	General Chemistry II .....	5
	General Chemistry II SUN# CHM 1152	
CMN 120	Business and Professional Communication .....	3
MAT 151*	College Algebra SUN# MAT 1151 .....	4
WRT 101*	Writing I SUN# ENG 1101 .....	3
<b>Subtotal</b> .....		<b>32</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>78.25-88.25</b>

Note: For the following courses, one (1) course may be repeated one (1) time. If a course needs to be repeated, re-entry into the remaining courses will be based on space availability: MLT 101, 199, 199WK, 200, 211, 221, 231, 251, 260, 299, and 299WK.

# 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:

1. Obtain an Arizona DPS Fingerprint Clearance Card.
2. Pass a urine toxicology screening exam.
3. 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.
4. Present proof of a variety of immunization including but not limited to MMR/Varicella/Hep-B/TDap/influenza.
5. Show proof of negative TB skin test or negative chest x-ray for TB.
6. 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 five credit transition course (NRS 188/188LS) and meet all acceptance requirements for admission into the third semester of the Associate Degree Nursing (ADN) Program.

### 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, HCA 102, or HCA 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. See the website or an advisor for details.

### Program Prerequisites

Students must have completed the following prerequisites (**with a grade of B or better within the last four years**) before they may begin the application process.

Appropriate reading assessment score..... 0

MAT 097* or Math assessment score into MAT 151* or higher within the last four years	0-3
BIO 201IN*, or BIO 201IH*, and BIO 202IN* Note: Complete the BIO 056IN prerequisite as needed.	8-9
PSY 101 Introduction to Psychology	4
<b>Subtotal</b>	<b>12-16</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 and WRT 102 fulfill this requirement.	†
Analysis and Critical Thinking Requirement BIO 201IN, or 201 IH or 202 IN; and MAT 097 or 151 fulfill this requirement.	†
Humanities and Social Science Requirement 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.	3
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 201*/201LC*	Nursing Process III	9
NRS 202*/202CA*/202CB*	Nursing Process IV	9
<b>Subtotal</b>		<b>35</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 Developmental Psychology	3
NRS 108**	Drug Calculations	1
NRS 155*	Introduction to Pharmacology	3
WRT 101*	Writing I SUN# ENG 1101	3
WRT 102*	Writing II SUN# ENG 1102	3
<b>Subtotal</b>		<b>17</b>
<b>Total credits as displayed with program prerequisites</b>		<b>67-71</b>

† Support or core 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.

\*\* NRS 108 requires a grade of A.

## Practical Nursing — Certificate for Direct Employment

Students who are accepted into, and complete the first three semesters of the Associate Degree Nursing program, including the courses listed below, are eligible for the Practical Nursing Certificate and to take the licensure exam to become a Licensed Practical Nurse. All the program admission and clinical requirements are the same for the Associate Degree in Nursing and the Practical Nursing Certificate.

This certificate is offered at the West Campus and earns college credit. A Practical Nursing certificate is also offered at the Center for Training and Development, located at the Desert Vista Campus, but will not earn college credit.

### What can I do with this certificate?

**Career Options:** Take the National Council Licensure Examination (NCLEX-PN) to be eligible to work as a licensed practical nurse.

**Academic Options:** Take courses to qualify as a registered nurse.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-55.html>

**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. 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 112* or appropriate reading assessment score.....	0-4
MAT 097* or Math assessment score into MAT 151* or higher.....	0-3
CHM 130/130LB/130IN* with at least a C or better or appropriate score on the Chemistry assessment.....	0-5
BIO 201IN* and BIO 202IN* with a combined average grade of B or better within the last six years. ....	8-12
Note: The average may be met with a grade of C in one course and a grade of A in the other.	
Complete the BIO 156IN prerequisite as needed.	
PSY 101 Introduction to Psychology .....	4
<b>Subtotal .....</b>	<b>12-28</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 fulfills this requirement.	
Analysis and Critical Thinking Requirement .....	†
Program prerequisites fulfill this requirement	
<b>Subtotal .....</b>	<b>0¥</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.

NRS 104*/104LC*/104LS*	Nursing Process I .....	8
NRS 105*/105LC*/105LS*	Nursing Process II .....	9
NRS 201*/201LC*	Nursing Process III .....	9
<b>Subtotal .....</b>		<b>26</b>

### Required Support Courses

BIO/FSN 127IN	Human Nutrition and Biology .....	4
BIO 205IN*	Microbiology SUN# BIO 2205 .....	4
ECE 107* or PSY 240*	Human Development and Relations Developmental Psychology .....	3



NRS 108**	Drug Calculations .....	1
NRS 155*	Introduction to Pharmacology .....	3
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102.....	3
<b>Subtotal</b> .....		<b>21</b>
<b>Total credits as displayed</b> .....		<b>59-75</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.

\*\* 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. Students interested in become a legal secretary should pursue an Office and Administrative Professions associate's degree.

## 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 Financial Accounting ( <i>was ACC 101</i> ) SUN# ACC 2201	3
CIS/CSA 104*	Computer Fundamentals	3
POS 201 or POS 210	American National Government and Politics SUN# POS 1110. National and State Constitutions	3
CMN 110	Public Speaking	3
WRT 101*	Writing I SUN# ENG 1101	3
WRT 102*	Writing 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 121/121LB\* or 121IN\*, 122/122LB\* or 122IN\*  
 210/210LB\* or 210IN, 216/216LB\* or 216IN, 221/221LB\*

Critical Thinking Category

PHI 120 SUN# PHI 1103

**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, 267,  
 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 and demonstrate an appropriate score on the College reading assessment.

### 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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-97.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7134; Lead Faculty: 520-206-7352

**Selective 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>		
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* or WRT 102*	Writing I SUN# ENG 1101 Writing II SUN# ENG 1102	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.

# Pharmacy Technology

Learn how to assist pharmacists in packaging and distributing medications.

## Pharmacy Technology — Certificate for Direct Employment

**This certificate is currently under review. See the website or advisor for details.**

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 meet the following requirements:

In addition to the program prerequisites listed below, this certificate program requires a Pharmacy Technology application which is available online in two formats. Students may submit a program application when all prerequisites are complete.

### 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-50.html>

**Location:** East Campus

**Department/Contact Information:**

Dean: 520-206-7694

Lead Faculty: 520-206-7850

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program, you must fulfill the following requirements.

REA 091 or Reading assessment score at REA 112 or higher. ....	0-4
MAT 092 with a grade of C or better or Math assessment score at MAT 097 or higher .....	0-3
WRT 090 with a grade of C or better or writing assessment score at WRT 101 .....	0-3
Completion of the following courses with a grade of C or better:	
PHT 170*, PHT 171IN*, PHT 172*, PHT 174IN* .....	5
<b>Subtotal</b> .....	<b>0-10</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 .....	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.

PHT 170	Introduction to Pharmacy Technology .....	2
PHT 171IN*	Pharmaceutical Calculations .....	4
PHT 172*	Drug Therapy I .....	4
PHT 174IN*	Pharmacy Operations .....	3
PHT 178IN*	Computer Applications for Pharmacy .....	3
PHT 180IN*	Sterile Products .....	4
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>Total credits as displayed with program prerequisites</b> .....		<b>42-52</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.  
 § Credits counted below.

## Pharmacy Technology — Associate of Applied Science Degree for Direct Employment

**This degree is currently under review. See the website or advisor for details.**

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 meet the following requirements:

In addition to the program prerequisites listed below, this certificate program requires a Pharmacy Technology application which is available online in two formats. Students may submit a program application when all prerequisites are complete.

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: 520-206-7694  
 Lead Faculty: 520-206-7850

### Program Prerequisites

Before enrolling in this program, you must fulfill the following requirements.

REA 091 or Reading assessment score at REA 112 or higher .....	0-4
MAT 092 with a grade of C or better or Math assessment score at MAT 097 or higher .....	0-3
WRT 090 with a grade of C or better or Writing assessment score at WRT 090 .....	0-3
Completion of the following courses with a grade of C or better:	
PHT 170*, PHT 171IN*, PHT 172*, PHT 174IN* .....	§
<b>Subtotal</b> .....	<b>0-10</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 .....	†
BIO 100IN (or 181IN*), CHM 130IN* (or 151IN*) and the Math prerequisite fulfill this 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>12†</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 174IN*	Pharmacy Operations .....	3
PHT 178IN*	Computer Applications for Pharmacy .....	3
PHT 180IN*	Sterile Products .....	4
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>		
BIO 100IN or BIO 181IN*	Biology Concepts .....	4
	General Biology (Majors) I SUN# BIO 1181	
CHM 130/130LB/ CHM 130IN* or CHM 151/ 151LB/151IN*	Fundamental Chemistry SUN# CHM 1130 .....	5
	General Chemistry I SUN# CHM 1151	
CHM 140/140LB/ 140IN* or CHM 152/ 152LB/152IN*	Fundamental Organic and Biochemistry SUN# CHM 2230 .....	5
	General Chemistry II SUN# CHM 1152	
<b>Subtotal</b> .....		<b>14</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>62-72</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.

§ Credits counted below.

# 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 take the College Reading, Math and Writing assessments and must achieve appropriate placement scores.

### *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: 520-206-5142

Lead Faculty: 520-206-5100

Program/Major Codes: **CRTPHB/PHB**

**Selective 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>		
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>



## Physics

Explore the science of energy and motion by taking physics courses that focus on mechanics, electricity and magnetism, waves and heat, relativity to the basics of quantum physics. Students learn through lecture and hands-on lab experiences.

**Physics courses are offered as part of the requirements of the Associate of Science degree**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU or UA should meet with physics faculty or an advisor to plan their course of study using the appropriate major guide.

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### *What can I do with my studies in physics?*

**Career options:** Work as a technician in laboratories, with research and development firms, in the laser or optics industry, or in manufacturing.

**Academic Options:** Continue studies towards a bachelor of science in physics, astrophysics, optical sciences, engineering, or education.

**Location:** All Campuses

# 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
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### Required Core Courses - A grade of C or better is required for graduation.

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>

### Required Support Courses

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.

# 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.

Please note that one or two of the Psychology concentration courses below may also fulfill AGEC-A general education requirements of the Associate of Arts in Liberal Arts. See an advisor or counselor.

Program/Major/Concentration Codes: **AOALIBRALART/ALA/ALAP**

Course Number	Course Title	Credit Hours
<b>Required Core Courses – A grade of C or better is required for graduation.</b>		
PSY 101 or PSY 100A and PSY 100B	Introduction to Psychology SUN# PSY 1101 .....	4-6
PSY 230*	Psychology I and Psychology II Psychological Measurements and Statistics .....	3
PSY 289*	Research Methods SUN# PSY 2290 .....	4
<b>Subtotal</b> .....		<b>11-13</b>

Select one additional course from the list below.

PSY 132*	Psychology and Culture .....	3
PSY 210	Introduction to Biopsychology .....	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 250*	Introduction to Social Psychology .....	3
PSY 254*	Psychology of Love and Compassion .....	3
PSY 262	Positive Psychology .....	3
<b>Subtotal</b> .....		<b>3</b>
<b>Total credits as displayed</b> .....		<b>14-16*</b>

\* 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.

## Public Safety and Emergency Services Institute

The purpose of the Public Safety and Emergency Services Institute is to provide training and educational opportunities and resources to several career areas including Administration of Justice, Law Enforcement, Emergency Medical Technician, Fire Science and Public Safety Communications. We offer convenient, flexible and immediately useful programs to professionals who seek advancement in their careers as well as courses for the general public. In addition, the Law Enforcement Associate of Applied Science Degree is designed to transfer to NAU's Bachelor of Applied Science Degree in Justice Systems and Policy Planning, and the Fire Science Associate of Applied Science Degree to ASU's Bachelor of Applied Science Degree in Fire Service Management. Both of these programs are offered in Tucson.

Educational opportunities at the Institute reflect contemporary issues, current techniques and technology used in public safety and emergency services. Our programs and services focus on the safety and well being of Southern Arizona and the greater community.

The training and education we offer can give your employees new and improved skills, insight, understanding, and opportunities to learn how to meet a changing agency's environment. We also provide all the academic support services they need: academic advising, computer labs, and information resources.

When your commissioned and non-commissioned employees enroll in courses which are a part of the Institute, your agency gains professionals who have a greater range of skills, and who have the education to meet the expanding role of your agency. The Institute provides a source for management education and leadership development plus targeted opportunities for professional development.

Our partnerships with public safety agencies are based on mutual respect, trust and benefit. We work together to make effective use of the talent, facilities and resources possessed by each partner.

See the following programs in this main program section of the catalog: Administration of Justice and Fire Science. See the following programs in the Workforce Response Programs in the Other Programs section of the catalog: Corrections, Emergency Medical Technology, and Law Enforcement. Also see courses in Community Development (CDE).

### **Public Safety and Emergency Services Institute**

Community Campus  
401 North Bonita Ave.  
Tucson, AZ 85709-5000  
520-206-6350

# 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:

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 Program 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:

1. Provide and maintain an Arizona DPS Fingerprint Clearance Card.
2. Pass an annual urine toxicology screening exam.
3. 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.
4. Provide own transportation to various clinical facilities throughout the Tucson regional area.
5. Present proof of immunization or immunity for MMR/Varicella/TDaP.
6. Obtain an annual flu shot.
7. Show proof of negative TB skin test or negative chest x-ray for TB.
8. Clinical rotations are at various clinical facilities throughout the Tucson regional area.
9. 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: 520-206-6663

Lead Faculty: 520-206-3105

**Selective 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.

### Program Prerequisites

Students must have completed the following prerequisites (with grades posted) before they may begin the application process.

International students must obtain an appropriate score on the institutional TOEFL (Test of English as a Second Language.)

REA 112\* or an appropriate score on the Reading assessment ..... 0-4

MAT 097\* with a grade of C or better within the last eight years, or Math assessment score at MAT 151 or higher within the last eight years..... 0-3

BIO 201IN\* and BIO 2021N\* 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. Complete BIO 156IN prerequisite as needed..... 8-12

HIT 105\*\* Medical Terminology ..... 4

**Subtotal** ..... **12-23**

**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 201IN, 202IN and the math prerequisite 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 .....	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>4-6‡</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.**

RAD 170/170LB*	Medical Imaging Fundamentals .....	3
RAD 171/171LB*	Radiographic Positioning I .....	4.5
RAD 172/172LB*	Medical Imaging Technology I .....	3.5
RAD 173LC*	Clinical Education I .....	6
RAD 174/174LB*	Radiographic Positioning II .....	4.5
RAD 175/175LB*	Medical Imaging Technology II .....	3.5
RAD 176LC*	Clinical Education II .....	6
RAD 177LC*	Clinical Education III .....	6
RAD 181/181LB*	Radiographic Positioning III .....	4
RAD 182*	Medical Imaging Technology III .....	3
RAD 183LC*	Clinical Education IV .....	4
RAD 184/184LB*	Radiographic Positioning IV .....	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.**

PSY 101	Introduction to Psychology SUN# PSY 1101 .....	4
WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102 .....	3
<b>Subtotal .....</b>	<b>10</b>	
<b>Total credits as displayed with program prerequisites .....</b>	<b>86-96</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.

\*\* HIT 162 is no longer offered, but will meet the prerequisite for students that have already taken the course.

# 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 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:

1. Provide and maintain an Arizona DPS Fingerprint Clearance Card.
2. Pass a urine toxicology screening exam.
3. 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.
4. 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.
5. Present proof of immunization or immunity for MMR/Varicella/Hep-B/TDaP.
6. Show proof of negative TB skin test or negative chest x-ray for TB.
7. 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: 520-206-6663  
Lead Faculty: 520-206-3107

**Selective 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.

**Program Prerequisites**

Students must have completed the following prerequisites (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)

REA 112 or appropriate reading assessment score.....	0-4
MAT 097 with a grade of C or better within the last eight years, or Math assessment score at MAT 151 or higher within the last eight years.....	0-3
CHM 130/130LB/130IN* with a grade of C or better, or appropriate Chemistry assessment score.....	0-5
Within the last six years with a grade of C or better: BIO 160IN, or all of the following:	
BIO 156IN and 201IN* and 202IN*.....	4-12
BIO 205IN* Microbiology.....	4
PSY 101 Introduction to Psychology.....	4
WRT 101 Writing I with a C or better.....	3
WRT 102 Writing II with a C or better.....	3
<b>Subtotal.....</b>	<b>18-38</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 program prerequisites fulfill this requirement	
Analysis and Critical Thinking Requirement.....	†
CHM 130IN and BIO 205IN and the math prerequisite fulfills this requirement	
Humanities and Social Science Requirement.....	3
PSY 101 program prerequisite 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 in Respiratory Care.....	5
RTH 123/123LB*	Basic Assessment and Monitoring.....	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.....	5
RTH 243/243LB*	Advanced Assessment and Monitoring.....	5
RTH 245LC*	Clinical Procedures III.....	4
RTH 246*	Cardiorespiratory Disorders I.....	3
RTH 251/251LB*	Advanced and Specialty Therapeutics.....	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>
<b>Total credits as displayed with program prerequisites.....</b>		<b>80-100</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.



## 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: 520-206-6996

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<del>¥</del></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: 520-206-6996

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 142 or 151 fulfills this requirement	
Social and Behavioral Sciences .....	†
SSE 110 and ECN 202 fulfill this requirement.	
Other Requirements .....	3
PSY 101 or SOC 101 fulfill 3 credits of this requirement. Complete another course from this category.	
Special Requirements	
The I, C, and G requirements should be fulfilled by selecting appropriate courses in the above categories	
<b>Subtotal .....</b>	<b>16</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.

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*	Human Biology for Allied Health .....	4
or BIO 160IN	Introduction to Human Anatomy and Physiology .....	
ECN 202*	Macroeconomic Principles SUN# ECN 2201 .....	3
MAT 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 .....	
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>23-27</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: 520-206-6996

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
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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 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 Population .....	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>
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‡ 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: 520-206-6996

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-29.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

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 Disorder 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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-26.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-27.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-28.html>

**Location:** West Campus

**Department/Contact Information:**

Dean: 520-206-6996

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 or by selecting SOC 203 as an elective.	
<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
<b>Subtotal .....</b>		<b>15</b>

### Sociology Electives

Select three credits from the following courses:

SOC 110	Introduction to Cities and Global Society .....	3
SOC 130*	Social World of Drugs .....	3
SOC 140	Sociology of Religion .....	3
SOC 166	Social Gerontology .....	3
SOC 203	Sociology of Utopia .....	3
SOC 215*	Human Sexuality .....	3
SOC 280	Sociology of Education .....	3
SOC 289*	Topics in Community Involvement .....	3
SOC 296*	Independent Study in Sociology .....	3
<b>Subtotal .....</b>		<b>3</b>



**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>
<b>Total credits as displayed</b> .....	<b>60</b>

† Core or support course(s) fulfill this requirement.

‡ The 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.

## Spanish

A student planning to obtain a degree with an option in Spanish should follow the **Associate of Arts Degree for Transfer in Liberal Arts**. See an advisor or counselor and to plan a course of study using the appropriate major guide.

Program Identification Code: **AOALIBRALART**

# Technical Writing and Communication

## Technical Writing and Communication – Post-degree Certificate for Direct Employment

Master the essential skills needed for a career in technical writing and communication. Technical writers communicate ideas clearly and concisely in manuals, reports, journal articles, web pages and other forms of print and electronic communication.

### What can I do with this certificate?

**Career Options:** Obtain employment or further your career as a technical writer in business or industry, or begin a career as a freelance writer.

**Academic Options:** Continue your studies by taking additional related coursework in writing and/or web development.

**More Information:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-34.html>

**Locations:** Downtown Campus and West Campus

**Department/Contact Information:**

Dean – Downtown: 520-206-7045

Dean – West: 520-206-6690

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

**Before enrolling in this program, you must fulfill the following requirements.**

Associate or bachelor's degree in a related field from an accredited institution.

WRT 101*	Writing I SUN# ENG 1101 .....	3
WRT 102*	Writing II SUN# ENG 1102.....	3
	or Equivalent coursework that will transfer.	
CIS 120	Computer Applications for Business.....	4
	or Comparable knowledge and skills in computer applications.	
<b>Subtotal</b>	.....	<b>6-10</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 Arts .....	3
DAR 120	Applied Computer Graphics .....	4
WRT 140*	Writing and Editing Technical Communications .....	3
WRT 254*	Advanced Professional Communication .....	3
Technical Elective – Complete one course from the following: .....		3-4
CSA 120*	Word Processing: Word	
CIS 121*	Web Publishing	
DAR 256*	Web Design I	
<b>Subtotal</b>	.....	<b>16-17</b>
<b>Total credits as displayed with program prerequisites</b>	.....	<b>22-27</b>

\* 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.**

- Program prerequisites must be completed as described in the AAS or Certificate Program Requirements with grades and/or assessment scores posted on PCC transcripts before applying to the program.
- 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.
- Complete prerequisite coursework with a grade of C or better prior to entry into the Massage Therapy Practice classes.

**To participate in the clinical portion of the program, the students must:**

1. Obtain an Arizona DPS Fingerprint Clearance Card.
2. Pass a urine toxicology screening exam.
3. 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.
4. Present proof of immunization or immunity for MMR/Varicella/Hep-B.
5. Show proof of negative TB skin test or negative chest x-ray for TB.
6. Maintain health insurance and a CPR card at the Health Care Provider Level throughout the program.

**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:** Review program costs, student debt, on-time graduation and more <https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-54.html>

**Location:** Northwest Campus

**Department/Contact Information:**

Dean: 520-206-2216  
Lead Faculty: 520-206-2263

**Selective 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.

**Program Prerequisites**

Before enrolling in TMA 202IN (or higher), you must fulfill the following requirements with a grade of C or better.

BIO 160IN, TMA 101, TMA 120, TMA 210, WED 110, WED 111, WRT 101 .....	\$
<b>Subtotal</b> .....	<b>\$</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 fulfills this requirement.	
Analysis and Critical Thinking Requirement .....	†
BIO 160IN fulfills the credit requirement for this category, but students must still meet math competency.**	
<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.**

BIO 160IN	Introduction to Human Anatomy and Physiology .....	4
TMA 101*	Introduction to Massage Therapy .....	3
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 203IN*	Therapeutic Massage Practice III .....	6
TMA 203LC*	Therapeutic Massage Practice Clinical Lab II .....	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 .....	3
TMA 290LC*	Therapeutic Massage Clinical .....	3
TMA 291*	Internship in Therapeutic Massage .....	1
WED 110	Introduction to Complementary and Alternative Medicine .....	3
WED 111	Self Care for Personal Wellness .....	2
<b>Subtotal .....</b>		<b>46</b>

**Required Support Courses**

WRT 101*	Writing I SUN# ENG 1101 .....	3
<b>Subtotal .....</b>		<b>3</b>
<b>Total credits as displayed with program prerequisites .....</b>		<b>49-52</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.

\*\* The math competency can be met by assessment or math coursework. See the General Education section of the catalog for details.

§ Credits counted below.

## 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.

- Program prerequisites must be completed as describes in the AAS or Certificate Program Requirements with grades and/or assessment scores posted on PCC transcripts before applying to the program.
- 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
- Complete prerequisite coursework with a grade of C or better prior to entry into the Massage Therapy Practice classes.

### To participate in the clinical portion of the program, the students must:

1. Obtain an Arizona DPS Fingerprint Clearance Card.
2. Pass a urine toxicology screening exam.
3. 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.
4. Present proof of immunization or immunity for MMR/Varicella/Hep-B.
5. Show proof of negative TB skin test or negative chest x-ray for TB.
6. Maintain health insurance and a CPR card at the Health Care Provider Level throughout the program.

### 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: 520-206-2216

Lead Faculty: 206-2263

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in TMA 202IN (or higher), you must fulfill the following requirements with a grade of C or better.

BIO 160IN, TMA 101, TMA 120, TMA 210, WED 110, WED 111, WRT 101 .....	\$
<b>Subtotal</b> .....	<b>\$</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 either WRT 102 or CMN 120 fulfill this requirement.	
Analysis and Critical Thinking Requirement .....	2
BIO 160IN fulfills 4 credits of this requirement, but students must still meet math competency. If math competency is met by assessment, students will need to complete 2 or more credits in Analysis and Critical Thinking category.	

Humanities and Social Science Requirement . . . . .	2
PSY 101 fulfills the Social Science requirement. Complete a course from the Humanities & Fine Arts or the Leadership & Ethics category.	
Computer and Information Literacy . . . . .	1
(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>5¥</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 . . . . .	3
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 203IN*	Therapeutic Massage Practice III . . . . .	6
TMA 203LC*	Therapeutic Massage Practice Clinical Lab II . . . . .	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*	Internship in Therapeutic Massage . . . . .	1
WED 110	Introduction to Complementary and Alternative Medicine . . . . .	3
WED 111	Self Care for Personal Wellness . . . . .	2
<b>Subtotal</b> . . . . .		<b>46</b>

**Required Support Courses**

ACC 100	Practical Accounting Procedures . . . . .	3
PSY 101	Introduction to Psychology SUN# PSY 1101 . . . . .	4
WRT 101*	Writing I SUN# ENG 1101 . . . . .	3
WRT 102*	Writing II SUN# ENG 1102 . . . . .	3
or CMN 120	Business and Professional Communication	
<b>Subtotal</b> . . . . .		<b>13</b>
<b>Total credits as displayed with program prerequisites</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 second language courses.

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

§ Credits counted below.

# 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. 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/webscape/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:** Review program costs, student debt, on-time graduation and more  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-17.html>

**Location:** Downtown Campus

**Department/Contact Information:**

Dean: 520-206-7045

Lead Faculty: 520-206-7274

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

Course Number	Course Title	Credit Hours
<b>Program Prerequisites</b>		
Before enrolling in this program (TRS 102 or higher) you must fulfill the following requirements.		
WRT 101* or WRT 107*	Writing I ..... Writing I for Non-Native Speakers of English	3
WRT 102* or WRT 108*	Writing II ..... Writing II for Non-Native Speakers of English	3
Pass a proficiency test or completion of the following:		
SPA 103*	Beginning Spanish for Heritage and Bilingual Learners .....	0-4
SPA 203*	Writing and Oral Skills for Heritage and Bilingual Learners .....	0-4
SPA 253*	Intermediate Spanish for Heritage and Bilingual Learners .....	0-4
SPA 254*	Intermediate Grammar and Writing for Heritage and Bilingual Learners .....	0-3
Demonstrate 50 percent competency translating a document without aid.		
<b>Subtotal</b> .....		<b>6-21</b>
<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 or TRS 203	Survey of Translation Specialty Areas ..... Consecutive Interpretation and Sight Translation	4
TRS 160 or TRS 270	Translation in Specialty Areas ..... Simultaneous Interpretation	4
TRS 161 or TRS 162	Medical Spanish/English Interpreting ..... Introduction to Legal Spanish/English Interpretation	3
TRS 202	Interpretation Techniques .....	3
TRS 282	Advanced Project in Translation .....	4
<b>Subtotal</b> .....		<b>27</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>33-48</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/webscape/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

**Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. See the website or an advisor for details.

### Program Prerequisites

Before enrolling in this program (TRS 102 or higher) you must fulfill the following requirements.

WRT 101*	Writing I .....	\$
or WRT 107*	Writing I for Non-Native Speakers of English	
WRT 102*	Writing II .....	\$
or WRT 108*	Writing II for Non-Native Speakers of English	

Pass a proficiency test or completion of the following:

SPA 103*	Beginning Spanish for Heritage and Bilingual Learners .....	0-4
SPA 203*	Writing and Oral Skills for Heritage and Bilingual Learners .....	0-4
SPA 253*	Intermediate Spanish for Heritage and Bilingual Learners .....	\$
SPA 254*	Intermediate Grammar and Writing for Heritage and Bilingual Learners .....	0-3

Demonstrate 50 percent competency translating a document without aid and interpreting an oral presentation.

**Subtotal .....** **0-11**

### 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	

**Subtotal .....** **6¥**

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
TRS 160	Translation in Specialty Areas .....	4

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 Spanish Speakers .....	4
SPA 254*	Intermediate Grammar and Writing for Heritage and Bilingual Learners .....	3
WRT 101*	Writing I SUN# ENG 1101 .....	3
or WRT 107*	Writing I for Non-Native Speakers of English	
WRT 102*	Writing II SUN# ENG 1102.....	3
or WRT 108*	Writing II for Non-Native Speakers of English	
<b>Subtotal</b> .....		<b>27-28</b>
<b>Total credits as displayed with program prerequisites</b> .....		<b>60-61</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.

# 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.

**Selective 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>		
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

**Selective 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>		
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: 520-206-7694  
 Lead Faculty: 520-206-7414
- Selective Admissions Program:** You are not fully admitted to this program until you have fulfilled the requirements listed below. 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>		
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,** you must meet certain requirements, in addition to the program prerequisites listed below:

- Meet the requirements for admission as a credit student at Pima Community College.
- Have prerequisite 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. Proof of an MMR vaccination series. Rabies immunizations will also be needed 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: 520-206-7694

Lead Faculty: 520-206-7414

**Selective 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.

### Program Prerequisites

Reading assessment score into REA 112 or completion of REA 091* . . . . .	0-4
MAT 097* or Higher with a grade of C or better. . . . .	3
BIO 156IN or BIO 181IN with a grade of C or better. . . . .	§
CHM 130/130LB/130IN or CHM 151/151LB/151IN with a grade of C or better. . . . .	§
CSA 100** with a grade of C or better . . . . .	§
<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 . . . . .	†
BIO, CHM and MAT program prerequisites 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>		
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	3
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	3
<b>Subtotal</b>		<b>47</b>
<b>Required Support Courses</b>		
BIO 156IN	Intro Biology Allied Health	4
or BIO 181IN	General Biology I: Majors SUN# BIO1181	
CHM 130/130LB/130IN*	Fundamental Chemistry SUN# CHM 1130	5
or CHM 151/151LB/151IN*	General Chemistry I SUN# CHM 1151	
CSA 100**	Computer Literacy	1
<b>Subtotal</b>		<b>10</b>
<b>Total credits as displayed with program prerequisites</b>		<b>72-76</b>

\* This course has a prerequisite, co-requisite, or recommendation. See course description section.

§ Credits counted below.

\*\* CIS/CSA 104 may be substituted for CSA 100.

† 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.

‡ VET 108 with a grade of C or better may be substituted for VET 100 and 225.

# 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.

## Writing

Learn to communicate effectively through the written word by taking courses that focus on grammar, poetry and short story writing, business writing, research skills, creative nonfiction, critical analysis of literature and more. Writing courses are also offered for those who are not native speakers of English.

Writing courses are offered as part of the requirements of the **AGEC** and the **Associate of Arts degree**, may be taken as an **AA Creative Writing Emphasis**, or may be taken as required or elective courses to complete other degrees. Students interested in pursuing a degree at ASU, NAU or UA should meet with the writing faculty or an advisor to plan their course of study using the appropriate major guide.

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### What can I do with my studies in writing?

**Academic Options:** Continue studies towards a bachelor of arts in English, journalism, education or other humanities disciplines.

**Location:** All campuses



# Educational Courses

## 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
Animal Science	ANS
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
Cooperative Education	CED
Crime Scene Management	CSM
Culinary Arts	CUL
Dance	DNC
Dental Assisting	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
Experiential Education	EED

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
Latin	LAT
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
Portuguese	POR
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
Russian	RUS
Science Summer Career Academy	SCA
Science for Teachers	SCT
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 Industry Operations	TVL
Truck Driver Training	TDT
Veterinary Science	VSC
Veterinary Technology	VET
Welding	WLD
Wellness Education	WED
Writing	WRT

# Accounting

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

## ACC 100 Practical Accounting Procedures

3 cr. hrs. 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, closing entries, and reversing entries.

Offered: Fall, Spring, Summer.

## ACC 150 Payroll Accounting

3 cr. hrs. 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.*

Offered: Fall, Spring.

## ACC 190 Internship in Accounting

3 cr. hrs. 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.*

Offered: Fall, Spring.

## ACC 200 Computerized Accounting I

4 cr. hrs. 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 or 211.*

Offered: Fall, Spring.

## ACC 204 Individual Tax Accounting

4 cr. hrs. 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.*

Offered: Fall, Spring.

## ACC 210 Computerized Accounting II

3 cr. hrs. 3 periods (3 lec.)

Continuation of ACC 200 using advanced accounting applications and commercial applications software. Includes working with an accounting practice set, advanced accounting spreadsheets, and accounting software research on the Internet.

*Prerequisite(s): ACC 200.*

Offered: May not be offered this year, check class schedule.

## ACC 211 Financial Accounting

3 cr. hrs. 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): MAT 092 or higher.*

Offered: Fall, Spring, Summer.

**ACC 212 Managerial Accounting**

3 cr. hrs. 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 and MAT 122 or higher.*

Offered: Fall, Spring, Summer.

**ACC 215 QuickBooks Computer Accounting**

3 cr. hrs. 3 periods (3 lec.)

Use of current QuickBooks software to set up and maintain accounting records for a small business. Includes modular accounting involving accounts receivable, accounts payable, inventory, and payroll features.

*Prerequisite(s): ACC 100 or 211.*

Offered: Fall, Spring.

**ACC 221 Intermediate Accounting I**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ACC 222 Intermediate Accounting II**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ACC 233 Cost Accounting**

3 cr. hrs. 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.*

Offered: Fall.

**ACC 250 Certified Bookkeeper Review**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ACC 260 Principles of Fraud Examination**

3 cr. hrs. 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.*

Offered: Spring.

**ACC 267 Computer Fraud Detection**

1 cr. hrs. 1 periods (1 lec.)

Overview of the fundamentals of computer fraud examination. Includes the examination methodology used within the field, Internet and e-commerce fraud, evidence gathering, prevention, and security.

*Prerequisite(s): ACC 260.*

*Offered: Spring.*

**ACC 273 Governmental Accounting**

3 cr. hrs. 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 longterm 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.*

*Offered: Spring.*

**ACC 296 Independent Study in Accounting**

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent study projects or special interest areas in accounting under the supervision of a faculty member.

*Prerequisite(s): ACC 211, 212.*

*Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

## Administration of Justice

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**AJS 101 Introduction to Administration of Justice Systems**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**AJS 109 Criminal Law**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**AJS 113 Criminal Justice Crime Control Policies and Practices**

3 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**AJS 115 Criminal Procedures**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**AJS 123 Corrections as a Process**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AJS 124 Ethics and the Administration of Justice**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AJS 170 Forensic Pathology and Death Investigation**

3 cr. hrs. 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.

Offered: Spring.

**AJS 201 Rules of Evidence**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AJS 204 Criminal Investigations**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AJS 210 Police Community and Human Relations**

3 cr. hrs. 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.

Offered: Spring.

**AJS 212 Juvenile Justice Procedures**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AJS 225 Criminology**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AJS 246 Race and Ethnicity Issues in the Administration of Justice**

3 cr. hrs. 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.

Offered: Fall.

**AJS 260 Criminal Justice Management**

3 cr. hrs. 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.*

Offered: Spring.

**AJS 280 Terrorism in the 21st Century**

3 cr. hrs. 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.

Offered: Fall, Spring.

## Agriculture

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**AGR 101 Introduction to Agriculture Science**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**AGR 102 Introduction to Plants, Soils and Crops**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Overview of plant systems. Includes taxonomy, anatomy and physiology, and reproduction. Also includes the history of agriculture, and principles of crop and pest management.

Offered: May not be offered this year, check class schedule.

**AGR 185 Careers in Crop Production**

1 cr. hrs. 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.

Offered: Summer.

**AGR 200IN Introduction to Soil Science**

4 cr. hrs. 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.*

Offered: Fall.



## American Indian Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### AIS 101 Introduction to American Indian Studies I

3 cr. hrs. 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.

Offered: Fall, Spring.

### AIS 122 Tohono O'odham History and Culture

3 cr. hrs. 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.

Offered: Spring.

### AIS 124 History and Culture of the Yaqui People

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### AIS 148 History of Indians of North America

3 cr. hrs. 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.

Offered: Fall, Spring.

### AIS 205 Introduction to Southwestern Prehistory

3 cr. hrs. 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.

Offered: Fall, Spring.

### AIS 206 Contemporary Native Americans of the Southwest

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## American Sign Language

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### ASL 050 Conversational Sign Language I

3 cr. hrs. 3 periods (3 lec.)

Introduction to conversational sign language skills. Includes basic sign vocabulary, d/Deaf culture, and an overview of communications systems.

Offered: May not be offered this year, check class schedule.

### ASL 055 Conversational Sign Language II

3 cr. hrs. 3 periods (3 lec.)

Continuation of ASL 050. Includes intermediate sign vocabulary, d/Deaf culture, and a focus on developing intermediate skills in sign language.

Information: Completion of ASL 050 or consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

### ASL 101 American Sign Language I

4 cr. hrs. 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: fingerspelling numbers; lexicalized fingerspelling; 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.

Offered: May not be offered this year, check class schedule.

### ASL 102 American Sign Language II

4 cr. hrs. 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 fingerspelling numbers. Also includes conceptual accuracy, modulations, sight line, lexicalized fingerspelling, 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.

Offered: Fall, Spring, Summer.

### ASL 105 Beginning Fingerspelling and Numbers

2 cr. hrs. 2 periods (2 lec.)

Enhancement of receptive and expressive sign language skills, methodology, theory, and application. Includes manual alphabet, numbers, basic monetary designations, basic mathematical functions, regional states, cities, and calendar designations. Also includes common acronyms, basic lexicalized fingerspelling, and history of fingerspelling.

Prerequisite(s): ASL 102.

Information: Additional lab hours are required outside of regularly scheduled class.

Offered: May not be offered this year, check class schedule.

**ASL 200 Introduction to the Deaf Community**

3 cr. hrs. 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.*

*Offered: Fall.*

**ASL 201 American Sign Language III**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ASL 202 American Sign Language IV**

4 cr. hrs. 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.*

*Offered: Spring.*

**ASL 203 Comparative Analysis of ASL and English**

3 cr. hrs. 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.*

*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.*

*Offered: Spring.*

**ASL 204 Discourse Features in ASL**

3 cr. hrs. 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*

*Offered: Fall, Spring.*

**ASL 205 Advanced Fingerspelling and Numbers**

2 cr. hrs. 2 periods (2 lec.)

Advanced receptive and expressive fingerspelling and number skills. Includes lexicalized fingerspelling, related theories/methodologies, numbers, advanced monetary designations, basic and advanced mathematical functions, acronyms for deaf-related organizations and services, common abbreviations, commonly fingerspelled words, major cities, states, and proper nouns.

*Prerequisite(s): ASL 105 and ASL 201.*

*Information: Additional lab hours are required outside of regularly scheduled class.*

*Offered: May not be offered this year, check class schedule.*

**ASL 215 ASL Literature: Narratives**

3 cr. hrs. 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.*

Offered: Spring.

**ASL 296 Independent Study in Sign Language**

1-3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

## Animal Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ANS 102 Introduction to Animal Industry**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Overview of livestock and poultry industries and practices. Includes production, marketing and distribution. Also includes application of scientific principles to health, behavior, nutrition, reproduction and performance.

Offered: May not be offered this year, check class schedule.

**ANS 196 Independent Study in Animal Science**

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Introductory study of a particular Animal Science subject or subjects to hone skills while working in an independent format.

*Information: Three credit hours of Animal Science and consent of instructor are required before enrolling in this course.*

*Information: 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.*

Offered: May not be offered this year, check class schedule.

## Anthropology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ANT 101 Human Origins and Prehistory**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ANT 102 Introduction to Cultural Anthropology and Linguistics**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ANT 105 Humanity and the Environment**

3 cr. hrs. 3 periods (3 lec.)

Technical, sociocultural, and political information on environmental science and technology for non-environmental majors. Includes ecosystems, population impacts, hydrological systems, air pollution, and environmental toxins. Also includes current topics such as the greenhouse effect, acid rain, drinking water contamination, toxic waste spills, governmental regulation and enforcement, and future environmental trends.

*Corequisite(s):* ANT 105LB

*Information:* Same as ENV 105.

Offered: Fall.

**ANT 105LB Humanity and the Environment Discovery Laboratory**

1 cr. hrs. 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.

Offered: Fall.

**ANT 109 Introduction to Global Studies**

3 cr. hrs. 3 periods (3 lec.)

Survey of modern globalization. Includes the study of dimensions of globalization, global organizations, global politics, cultural globalization, the global economy, global environmental independence, and global social movements and counter movements. Also includes global interactions and their current effects on the restructuring of cultural, political, and economic institutions worldwide.

*Information:* Same as GLS 109 and SOC 109.

Offered: May not be offered this year, check class schedule.

**ANT 110 Buried Cities and Lost Tribes**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ANT 112 Exploring Non-Western Cultures**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**ANT 127 History and Culture of the Mexican-American in the Southwest**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ANT 136 Body and Art**

3 cr. hrs. 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.*

*Offered: Spring.*

**ANT 148 History of Indians of North America**

3 cr. hrs. 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.*

*Offered: Spring.*

**ANT 180 Artifact Identification: Tucson Basin**

1 cr. hrs. 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.*

*Offered: Spring.*

**ANT 181 Global Positioning Systems Basics**

1 cr. hrs. 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.*

*Offered: Fall.*

**ANT 202 Sexuality, Gender and Culture**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ANT 204IN Human Evolution: Ape Men, Cave Women and Missing Links**

4 cr. hrs. 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.*

*Offered: Spring.*

**ANT 205 Introduction to Southwestern Prehistory**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ANT 206 Contemporary Native Americans of the Southwest**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ANT 210 Cultural Anthropology**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ANT 215 The Nature of Language**

3 cr. hrs. 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.

*Offered: Fall.*

**ANT 225 Principles of Archaeology**

3 cr. hrs. 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.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

*Information: Same as ARC 225.*

*Offered: Fall.*

**ANT 250 Archaeology Laboratory**

4 cr. hrs. 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 101, 180.*

*Information: Same as ARC 250.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

*Information: Same as ARC 250.*

*Offered: May not be offered this year, check class schedule.*

**ANT 253 Death and Dying Across Cultures**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**ANT 265 Mapping Concepts**

1 cr. hrs. 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.*

*Offered: Fall.*

**ANT 267 Introduction to Geographic Information Systems**

3 cr. hrs. 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.

*Information:* Basic computer skills are required before enrolling in this course.

*Information:* Same as ARC/GEO/GIS 267.

Offered: Fall.

**ANT 275 Archaeological Excavation I**

4 cr. hrs. 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.

Offered: Fall.

**ANT 276 Archaeological Surveying I**

4 cr. hrs. 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.

*Prerequisite(s):* ANT/ARC 180 or concurrent enrollment.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

*Information:* Same as ARC 276.

Offered: Spring.

**ANT 277 Archaeological Excavation II**

4 cr. hrs. 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 205 and ANT/ARC 265 or concurrent enrollment, ANT/ARC 275, and GLG 101.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

*Information:* Same as ARC 277.

Offered: Fall.

**ANT 278 Archaeological Surveying II**

4 cr. hrs. 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 205, 265 (or concurrent enrollment), 276 and GLG 101.

*Information:* Same as ARC 278. Consult instructor for alternative prerequisite(s).

Offered: Spring.

**ANT 281 Global Positioning Systems**

1 cr. hrs. 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 handheld GPS receivers, data collection with handheld GPS, the use of mapping software with data from handheld 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.

*Information:* Same as ARC/GIS 281.

Offered: Spring.



**ANT 284 Computer Cartography and CAD**

3 cr. hrs. 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/GEO/GIS 284.

*Offered:* Spring.

**ANT 286 Electronic and Digital Field Mapping**

4 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ANT 295 Field Projects**

.5-4 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ANT 296 Independent Studies in ANT/ARC**

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Students independently continue their studies in anthropology under the supervision of a faculty member.

*Information:* Consent of instructor is required before enrolling in this course.

*Information:* May be taken three times for a maximum of twelve credit hours. If this course is repeated see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Information:* Same as ARC 296.

*Offered:* May not be offered this year, check class schedule.

## Arabic

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ARB 101 Elementary Modern Standard Arabic I**

5 cr. hrs. 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.

*Offered:* Spring.

**ARB 102 Elementary Modern Standard Arabic II**

5 cr. hrs. 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.

*Offered:* Fall.

## Archaeology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### ARC 060 Artifacts and Sites of Tucson

.5 cr. hrs. .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.*

Offered: Spring.

### ARC 062 Stone Tool Making

.5 cr. hrs. .5 periods (.5 lec.)

Introduction to the production of chipped stone tools. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

Offered: Fall, Spring.

### ARC 093 Archaeology Workshop

.5-3 cr. hrs. .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.

Offered: Spring.

### ARC 101 Human Origins and Prehistory

3 cr. hrs. 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.*

Offered: Fall, Spring.

### ARC 110 Buried Cities and Lost Tribes

3 cr. hrs. 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.*

Offered: Fall, Spring.

### ARC 180 Artifact Identification:Tucson

1 cr. hrs. 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.*

Offered: Spring.

### ARC 181 Global Positioning Systems Basics

1 cr. hrs. 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.*

Offered: Fall.

### ARC 204IN Human Evolution: Ape Men, Cave Women and Missing Links

4 cr. hrs. 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.*

Offered: Spring.

**ARC 205 Introduction to Southwestern Prehistory**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ARC 225 Principles of Archaeology**

3 cr. hrs. 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.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

*Information: Same as ANT 225.*

*Offered: Fall.*

**ARC 250 Archaeology Laboratory**

4 cr. hrs. 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 101 and 180.*

*Information: Prerequisites may be waived with consent of instructor.*

*Information: Same as ANT 250.*

*Offered: May not be offered this year, check class schedule.*

**ARC 265 Mapping Concepts**

1 cr. hrs. 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.*

*Offered: Fall.*

**ARC 267 Introduction to Geographic Information Systems**

3 cr. hrs. 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.*

*Offered: Fall.*

**ARC 275 Archaeological Excavation I**

4 cr. hrs. 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.*

*Offered: Fall.*

**ARC 276 Archaeological Surveying I**

4 cr. hrs. 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.

*Prerequisite(s):* ANT/ARC 180 or concurrent enrollment.

*Recommendation:* Consult instructor for alternative prerequisites.

*Information:* Same as ANT 276.

Offered: Spring.

**ARC 277 Archaeological Excavation II**

4 cr. hrs. 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 205 and ANT/ARC 265 or concurrent enrollment, ANT/ARC 275 and GLG 101.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

*Information:* Same as ANT 277.

Offered: Fall.

**ARC 278 Archaeological Surveying II**

4 cr. hrs. 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 205, 265 (or concurrent enrollment), 276 and GLG 101.

*Information:* Same as ANT 278. Consult instructor for alternative prerequisite(s).

Offered: Spring.

**ARC 281 Global Positioning Systems**

1 cr. hrs. 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 handheld GPS receivers, data collection with handheld GPS, the use of mapping software with data from handheld 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.

Offered: May not be offered this year, check class schedule.

**ARC 284 Computer Cartography and CAD**

3 cr. hrs. 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/GEO/GIS 284.

Offered: Spring.

**ARC 286 Electronic and Digital Field Mapping**

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**ARC 295 Field Projects**

.5-4 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ARC 296 Independent Studies in ANT/ARC**

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Students independently continue their studies in anthropology under the supervision of a faculty member.

*Information: Consent of instructor is required before enrolling in this course.*

*Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.*

*Information: Same as ANT 296.*

*Offered: May not be offered this year, check class schedule.*

## Art

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ART 100 Basic Design**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**ART 105 Exploring Art and Visual Culture**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**ART 106 Survey of Painting Materials and Techniques**

3 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**ART 109 Watercolor Painting**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**ART 110 Drawing I**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**ART 115 Color and Composition**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 120 Sculptural Design**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 121 Figure Sculpture**

3 cr. hrs. 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.*

Offered: Spring.

**ART 123 Lost Wax Sculpture Casting**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to metal casting of sculpture with emphasis on the ceramic shell method of moldmaking, 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.*

Offered: Fall, Spring.

**ART 128 Digital Photography I**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 130 Art and Culture: Prehistoric through Gothic**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ART 131 Art and Culture: Late Gothic through Modern Periods**

3 cr. hrs. 3 periods (3 lec.)

Continuation of ART 130. Includes western civilization's major contribution to the development of sculpture, painting, and architecture from the Renaissance into the twentieth century.

Offered: Fall, Spring, Summer.

**ART 133 Art in America**

3 cr. hrs. 3 periods (3 lec.)

Introductory survey of American art from the colonial period to the present as well as European and global influences. Includes characteristics of American art, cultural conditions surrounding historical periods, influences on art production, surrounding cultural production, unique contributions of diverse cultural groups, and critical methodologies.

*Offered: May not be offered this year, check class schedule.*

**ART 135 Pre-Columbian Art**

3 cr. hrs. 3 periods (3 lec.)

Anthropological and art historical survey of the indigenous cultures of the Americas from the earliest times to the period of the Spanish conquest. Includes non-Western art and Western gaze, humanity in the Americas, art and architecture of the Pre-Columbian Andes, art and architecture of Pre-Columbian Mesoamerica, and North American indigenous art and architecture.

*Offered: May not be offered this year, check class schedule.*

**ART 136 Body and Art**

3 cr. hrs. 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.*

*Offered: Spring.*

**ART 140 Photography I**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ART 141 Photography II**

3 cr. hrs. 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.*

*Offered: Spring.*

**ART 146 Lighting for Photography I**

4 cr. hrs. 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.*

*Information: There may be additional supply costs in addition to course fees.*

*Information: Same as DAR 146.*

*Offered: Fall, Spring.*

**ART 147 Alternative Processes in Photography**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ART 160 Ceramics I**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to ceramics. Includes beginning handbuilding 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.*

Offered: Fall, Spring.

**ART 170 Metalwork I: Jewelry**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 175 Ferrous Metalwork: Blacksmithing, Tool Making/Knife Making**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 180 Weaving I: Four-Harness Loom**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Weaving on a four-harness loom. Includes projects involving color, texture, patterns, and the use of tabby, twill, tubular, textural, and tapestry weaves in the creation of fiber art and creative and functional objects.

*Recommendation: Completion of ART 100 before enrolling in this course.*

Offered: Spring.

**ART 181 Mixed Media Fibers**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to fiber as an art medium. Includes fiber processes such as basketry, crochet, macrame, plaiting, surface design, and mixed media, which are used to create artistic compositions.

*Recommendation: Completion of ART 100 before enrolling in this course.*

Offered: Spring.

**ART 210 Drawing II**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 212 Printmaking I**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to basic aesthetics and techniques of printmaking. Includes intaglio etching, relief printing, and monotypes.

Offered: Fall, Spring.

**ART 213 Life Drawing I**

3 cr. hrs. 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.*

Offered: Fall, Spring.



**ART 214 Printmaking II**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 212. Includes advanced problems in aesthetics and techniques of intaglio etching, relief printing, monotype techniques, and alternative and non-traditional approaches to printmaking.

Offered: Fall, Spring.

**ART 215 Painting I**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 216 Screenprinting I**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ART 217 Painting II**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 218 Screenprinting II**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 216. Includes equipment orientation, advanced stencil-making techniques, printing, and types of printing papers.

*Prerequisite(s): ART 216.*

*Information: Students may select areas of interest for concentration and refinement of skills.*

Offered: Fall, Spring.

**ART 219 Printmaking III**

3 cr. hrs. 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.*

Offered: Spring.

**ART 220 Sculpture**

3 cr. hrs. 6 periods (3 lec., 3 lab)

Exploration of methods, materials, and content used in sculpture. Includes art elements, art principles, media and technique, sculpture lab procedures, content issues, projects, and visual literacy and critical analysis.

*Information: ART 120 or consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring.

**ART 223 Life Drawing II**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**ART 227 Painting III**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ART 230 History of Photography**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the history of photography from 1839 to contemporary schools. Includes development of the technical aspects of photography, styles, movements and its relationship to artistic and cultural heritage.

Offered: May not be offered this year, check class schedule.

**ART 232 Digital Photography II**

4 cr. hrs. 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.

*Information:* There will be additional supply costs beyond course fees.

Offered: Spring.

**ART 246 Lighting for Photography II**

4 cr. hrs. 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.

*Information:* There may be additional supply costs in addition to course fees.

*Information:* Same as DAR 246.

Offered: Fall, Spring.

**ART 248 Individual Projects in Photography**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Individual projects in photography at the advanced level. Includes defining a body of work, applying visual presentation formats, editing 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

**ART 249 Artists' Books**

3 cr. hrs. 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.

Offered: Spring.

**ART 250 Gallery and Museum Practices**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to practices and procedures of galleries and museums. Includes management of student gallery spaces on campus. Also includes community involvement with local business.

*Recommendation: Completion of ART 100 before enrolling in this course. Prerequisite(s): ART 100. Consult instructor for alternative prerequisites.*

Offered: Fall, Spring.

**ART 260 Ceramics II**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 160. Includes intermediate handbuilding 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.*

Offered: Fall, Spring.

**ART 261 Ceramics III**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 260. Includes intermediate and advanced handbuilding 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.*

Offered: Fall, Spring.

**ART 262 Ceramics IV**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 261. Includes advanced handbuilding 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.*

Offered: Fall, Spring.

**ART 265 Furnace Glassblowing I**

3 cr. hrs. 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 Art Academy. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.*

Offered: Fall, Spring.

**ART 266 Furnace Glassblowing II**

3 cr. hrs. 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 Art Academy. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.*

Offered: Spring.

**ART 270 Metalwork II: Jewelry**

3 cr. hrs. 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.*

Offered: Spring.

**ART 271 Metalwork II: Smithing and Casting**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Design and production of jewelry and metal objects. Includes design approaches to metalwork, review or various intermediate techniques, functional considerations involved in smithing and casting, and safety and health issues.

*Prerequisite(s):* ART 170.

*Offered:* May not be offered this year, check class schedule.

**ART 280 Weaving II**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Spring.

**ART 288 Portfolio Preparation**

3 cr. hrs. 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.

*Recommendation:* For advanced students who have completed coursework in their specific areas.

*Information:* Portfolio concentrations will be determined in a conference between student and instructor.

*Information:* Same as FDC 288.

*Offered:* Fall, Spring.

**ART 29611 Independent Study in ART: Art History**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

**ART 29612 Independent Study in ART: Ceramics**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**ART 29613 Independent Study in ART: Metals**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

**ART 29614 Independent Study in ART: Painting, Drawing, and Design**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**ART 29615 Independent Study in ART: Photography**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**ART 29616 Independent Study in ART: Printmaking**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

**ART 29617 Independent Study in ART: Sculpture**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

**ART 29618 Independent Study in ART: Fibers**

3 cr. hrs. 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. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall.

**ART 29619 Independent Study in ART: Glass**

3 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.*

*Information: 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.*

Offered: May not be offered this year, check class schedule.

## Art For Personal Development

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**APD 050 Photography**

2 cr. hrs. 4 periods (1 lec., 3 lab)

Introduction to film and digital photography for the hobbyist/enthusiast. Includes history of still photography, introduction to the camera: digital or film, principles of exposure, manipulating light, and darkroom orientation.

*Information: Students will supply their own camera and necessary materials. There are no additional course fees.*

Offered: May not be offered this year, check class schedule.

**APD 062 Acrylic and Oil Painting**

2 cr. hrs. 4 periods (1 lec., 3 lab)

Introduction to oil and acrylic painting. Includes painting preparation, composing and building paintings, and developing a personal vision.

Offered: May not be offered this year, check class schedule.

**APD 065 Watercolor**

2 cr. hrs. 4 periods (1 lec., 3 lab)

Introduction to watercolor painting for personal use. Includes watercolor materials, properties of watercolor pigments, and watercolor application methods.

Offered: [May not be offered this year, check class schedule.](#)

## Astronomy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**AST 101IN Solar System**

4 cr. hrs. 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.*

Offered: [Fall, Spring, Summer.](#)

**AST 102IN Stars, Galaxies, Universe**

4 cr. hrs. 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.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

Offered: [Fall, Spring.](#)

**AST 105IN Life in the Universe**

4 cr. hrs. 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 photogeology 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 089.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

Offered: [Fall, Spring.](#)

**AST 296LB Independent Study in Astronomy**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: [May not be offered this year, check class schedule.](#)

## Automotive Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### **AUT 100 Small Engine Troublesht&Repair**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 101 Automotive Maintenance**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 105 Light Line Maintenance**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 120 Engine Diagnosis and Repair**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 122 Engine Remove and Install**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 124 Automotive Diesel Engine Tune-Up**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 126 Engine Performance and Driveability Troubleshooting**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 128 Automotive Electrical Fundamentals and Applications**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **AUT 129 Automotive Electrical Accessories**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**AUT 132 Automotive Drivetrain Removal and Replacement**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AUT 133 Automatic Transmission/Transaxle Service and Rebuilding**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AUT 136 Automotive Manual Transmission and Driveline Service**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**AUT 138 Automotive Suspension Systems**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**AUT 139 Automotive Steering and Alignment Systems**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**AUT 140 Automotive Brakes Diagnosis and Repair**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**AUT 142 Automotive Heating, Ventilation, and Air Conditioning**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**AUT 185 Automotive Shop Skills Application**

.5-3 cr. hrs. 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.*

Offered: Fall, Spring.



## Aviation Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### AVM 100 Aircraft Maintenance Fundamentals

6 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### AVM 100A Aircraft Maintenance Fundamentals: Module A

3 cr. hrs. 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.*

*Offered: Fall.*

### AVM 100B Aircraft Maintenance Fundamentals: Module B

3 cr. hrs. 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.*

*Offered: Spring.*

### AVM 101 Structural Repair I

4 cr. hrs. 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.*

*Offered: Fall.*

### AVM 102 Structural Repair II

4 cr. hrs. 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 101.*

*Offered: Fall.*

### AVM 105 Aircraft Sheetmetal Repair

5 cr. hrs. 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.

*Offered: Fall.*

### AVM 110 Aircraft Blueprint Reading

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**AVM 114 Regulatory Requirements**

3 cr. hrs. 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.

Offered: Fall, Spring.

**AVM 130 Aircraft Composite Repair**

5 cr. hrs. 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.*

Offered: Fall.

**AVM 150 Structural Repair III**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**AVM 151 Structural Repair IV**

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of AVM 150. Includes locking fasteners, damage classifications, and structural repair processes.

*Prerequisite(s): AVM 150.*

Offered: May not be offered this year, check class schedule.

**AVM 165 Aircraft Hardware and Fasteners**

3 cr. hrs. 3 periods (3 lec.)

Aircraft structural repair hardware and fasteners. Includes specifications and standards, types, control linkages, tubing, hose and packings.

Offered: May not be offered this year, check class schedule.

**AVM 180 General CFR 14 Part 65 Maintenance Review**

7.75 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 180A General CFR 14 Part 65 - Basic Electricity**

1.5 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 180B General CFR 14 Part 65 - Aircraft Drawings**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 180C General CFR 14 Part 65 - Weight and Balance**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 180D General CFR 14 Part 65 - Fluid Lines and Fittings**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 180E General CFR 14 Part 65 - Materials and Processes**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 180F General CFR 14 Part 65 - Ground Operations/Serviceing**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 180G General CFR 14 Part 65 - Mathematics**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 180H General CFR 14 Part 65 - Maintenance Forms/Records**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 180I General CFR 14 Part 65 Basic Physics**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 181 Airframe CFR 14 Part 65 Maintenance Review**

7.75 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 181A Airframe CFR 14 Part 65 - Aircraft Coverings**

.75 cr. hrs. .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 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 181C Airframe CFR 14 Part 65 - Assembly and Rigging**

.75 cr. hrs. .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 torqueing 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.*

Offered: Fall, Spring, Summer.

**AVM 181D Airframe CFR 14 Part 65 - Airframe Inspection**

.75 cr. hrs. .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 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 181F Airframe CFR 14 Part 65 - Cabin Atmosphere Control**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 181G Airframe CFR 14 Part 65 - Aircraft Fuel Systems**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 181H Airframe CFR 14 Part 65 - Aircraft Electrical System**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 181I Airframe CFR 14 Part 65 - Ice and Rain Control**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 181J Airframe CFR 14 Part 65 - Fire Protection System**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 182 Powerplant CFR 14 Part 65 Maintenance Review**

7.75 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 182A Powerplant CFR 14 Part 65 - Reciprocating Engines**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 182B Powerplant CFR 14 Part 65 - Turbine Engines**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 182C Powerplant CFR 14 Part 65 - Engine Inspection**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**AVM 182D Powerplant CFR 14 Part 65 - Engine Instrument System**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 182E Powerplant CFR 14 Part 65 - Engine Electrical System**

1.5 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 182F Powerplant CFR 14 Part 65 - Fuel Metering System**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 182G Powerplant CFR 14 Part 65 - Induction and Engine Airflow**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 182H Powerplant CFR 14 Part 65 - Propellers**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**AVM 202 Aviation Safety**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Fall, Spring.

**AVM 203 Structural Repair V**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**AVM 204 Structural Repair VI**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.



**AVM 205 Motion Dynamics**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Fall, Spring.

**AVM 206 Materials and Processes**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Spring.

**AVM 207 Weight and Balance**

3 cr. hrs. 5 periods (1 lec., 4 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: GTM 105V.

Offered: Spring.

**AVM 208 Basic Electricity**

5 cr. hrs. 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: GTM 105V.

Offered: Fall, Spring.

**AVM 209 Intermediate Electricity**

5 cr. hrs. 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.

Offered: Fall, Spring.

**AVM 210 Advanced Composite Aircraft Repair I**

4 cr. hrs. 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

Offered: May not be offered this year, check class schedule.

**AVM 210LB Advanced Composite Aircraft Repair I Lab**

1 cr. hrs. 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

Offered: May not be offered this year, check class schedule.

**AVM 211 Alternate Structures**

5 cr. hrs. 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.

Offered: Fall, Spring.

**AVM 218 Airframe Rigging and Landing Gear Systems**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Fall, Spring.

**AVM 219 Airframe Inspections**

3 cr. hrs. 5 periods (1 lec., 4 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.*

Offered: Spring.

**AVM 223 Hydraulic and Pneumatic Power**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Fall, Spring.

**AVM 224 Atmospheric Controls**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Spring.

**AVM 225 Fire, Ice, Rain, and Fuel Systems**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Fall, Spring.

**AVM 226 Engine Electrical**

5 cr. hrs. 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.*

Offered: Fall, Spring.

**AVM 227 Engine Air Flow Systems**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Fall, Spring.

**AVM 228 Aircraft Propellers**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Spring.

**AVM 229 Engine Support Systems**

3 cr. hrs. 5 periods (1 lec., 4 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.

Offered: Spring.

**AVM 231 Engine Principles, Monitoring and Inspection**

5 cr. hrs. 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.

Offered: Fall, Spring.

**AVM 232 Reciprocating Engine Overhaul**

5 cr. hrs. 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.

Offered: Spring.

**AVM 233 Turbine Engines**

5 cr. hrs. 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.

Offered: Spring.

**AVM 234 Engine Fuel Metering and Operation**

5 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**AVM 260 Advanced Composite Aircraft Repair II**

1 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**AVM 260LB Advanced Composite Aircraft Repair II Lab**

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of AVM 260.

*Prerequisite(s):* AVM 210/210LB.

*Corequisite(s):* AVM 260

*Offered:* May not be offered this year, check class schedule.

## Avionics Technician Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ATT 100 Basic Electricity for Avionics**

3 cr. hrs. 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.

*Offered:* Fall.

**ATT 101 Avionics Familiarization**

3 cr. hrs. 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.

*Offered:* Fall.

**ATT 102 Aircraft Electrical Systems**

3 cr. hrs. 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.

*Offered:* Fall.

**ATT 103 Basics of Avionics Installation**

3 cr. hrs. 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.*

Offered: Spring.

**ATT 104 Operating Systems I, Communication and Navigation**

4 cr. hrs. 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.*

Offered: Spring.

**ATT 201 Operating Systems II, GPS Navigation and Auto Pilot**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**ATT 202 GPS Navigation and Auto Pilot Installation**

5 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**ATT 203 Avionics Test Equipment**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**ATT 204 Glass Cockpit Installer**

5 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**ATT 205 Operating Systems III, Infrared and Weather Radar**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**ATT 206 Infrared and Weather Radar Installation**

5 cr. hrs. 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.*

Offered: Fall.

## Behavioral Health Services

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**BHS 132 Communication Skills in Behavioral Health Services**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**BHS 154 Behavioral Health Lab and Safety Protocol**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**BHS 172 Clinical Behaviors**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**BHS 189LC Behavioral Health Clinical - Basic**

1 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**BHS 250 Case Documentation**

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Biology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**BIO 056IN Introductory Biology for Pima Nursing**

3 cr. hrs. 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.*

*Information: 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.*

*Information: This course is only for students pursuing a Pima Nursing degree (please check with a nursing advisor.)*

Offered: Fall, Spring.

**BIO 100HC Biology Concepts: Honors**

4 cr. hrs. 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 an integrated lecture/lab combination.*

*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 publishable quality, peer reviewed paper or project in a format appropriate for the discipline; presentation of research, in class or to a wider audience.*

Offered: Fall, Spring, Summer.

**BIO 100IN Biology Concepts**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BIO 104IN Animal Sexual Behavior**

4 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**BIO 105HC Environmental Biology: Honors**

4 cr. hrs. 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.*

*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 publishable quality, peer reviewed paper or project in a format appropriate for the discipline: presentation of research, in class or to a wider audience.*

*Offered: May not be offered this year, check class schedule.*

**BIO 105IN Environmental Biology**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BIO 108IN Plants, People and Society**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**BIO 109IN Natural History of the Southwest**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**BIO 110 Techniques and Mathematics for the Laboratory**

2 cr. hrs. 2 periods (2 lec.)

Introduction to the use of proper techniques and mathematical calculations in a laboratory setting. Includes safety, laboratory mathematics, and ancillary equipment and instruments.

*Prerequisite(s): MAT 092 (or required score on assessment test), and CHM 080 or 130 (or placement into CHM 151).*

*Information: Prerequisite(s) may be waived with consent of instructor.*

*Information: Same as MLT 110.*

*Offered: May not be offered this year, check class schedule.*



**BIO 112 Bioscience Laboratory Fundamentals**

3 cr. hrs. 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 092 (or required score on assessment test), and CHM 130IN (or placement into CHM 151).

*Information:* Successful completion of High School Chemistry with a grade of C or higher may waive the Chemistry prerequisite for this course; see faculty or advisor for information.

Offered: Fall.

**BIO 115IN Wildlife of North America**

4 cr. hrs. 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.

Offered: Fall, Spring.

**BIO 121IN Current Issues in Human Biology**

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**BIO 127HC Human Nutrition and Biology: Honors**

4 cr. hrs. 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.

*Information:* Must qualify for Honors program. Faculty or Advisor approval may be 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 format appropriate for this discipline; and presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

**BIO 127IN Human Nutrition and Biology**

4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**BIO 135IN Genetics, Biotechnology and Human Affairs**

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**BIO 156IN Intro Biology Allied Health**

4 cr. hrs. 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 130 before enrolling in this course.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

*Offered: Fall, Spring, Summer.*

**BIO 157 Basic Histology for Anatomy and Physiology**

1 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BIO 160IN Introduction to Human Anatomy and Physiology**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BIO 181HC General Biology I (Majors): Honors**

4 cr. hrs. 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 151, REA 112 (or assessment above this level) and WRT 090 or 096 (or assessment into WRT 101).*

*Recommendation: 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. Faculty or Advisor approval may be 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 format appropriate for this discipline; and presentation of research, in class or to a wider audience.*

*Offered: Fall, Spring.*

**BIO 181IN General Biology I: (Majors)**

4 cr. hrs. 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 151*

*Recommendation: WRT 090 or 096 or assessment into WRT 101.*

*Recommendation: 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.*

*Offered: Fall, Spring, Summer.*

**BIO 182HC General Biology II (Majors): Honors**

4 cr. hrs. 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. Faculty or Advisor approval may be 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 format appropriate for this discipline; and presentation of research, in class or to a wider audience.*

Offered: Fall, Spring.

**BIO 182IN General Biology II: (Majors)**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BIO 183IN Marine Biology**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**BIO 184IN Plant Biology**

4 cr. hrs. 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.*

Offered: Fall.

**BIO 201IH Human Anatomy, Physiology and Histology**

5 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BIO 201IN Human Anatomy and Physiology I**

4 cr. hrs. 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): Each with a grade of C or better: BIO 156IN, or 056IN, or BIO 157 and BIO 181IN, or 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.*

Offered: Fall, Spring, Summer.

**BIO 202IN Human Anatomy and Physiology II**

4 cr. hrs. 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 C or better.

*Information:* IN designates an integrated lecture/lab combination. Offer: Fall, Spring, Summer.

**BIO 203 Anatomy and Physiology Review for Health Related Professions**

1.25 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

**BIO 205IN Microbiology**

4 cr. hrs. 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 firsthand experience with the organisms and processes discussed in lecture.

*Prerequisite(s):* BIO 156IN or 181IN or 201IH or required score on the Biology assessment test.

*Recommendation:* Completion of CHM 130 or equivalent.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

**BIO 206 Biotechnology Instrumentation I**

4 cr. hrs. 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.

Offered: Fall.

**BIO 207 Biotechnology Instrumentation II**

4 cr. hrs. 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.

Offered: Spring.

**BIO 218 Human Pathophysiology**

4 cr. hrs. 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.

Offered: Spring.

**BIO 250 Biomedical Ethics**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**BIO 295LB Independent Research in Biology**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring, Summer.

**BIO 296 Special Projects in Biology**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**BIO 299 Co-op: Biotechnology**

1 cr. hrs. 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 236 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring, Summer.

**BIO 299WK Co-op Work: Biotechnology**

3 cr. hrs. 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 236 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring, Summer.

## Building and Construction Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**BCT 100 Professionalism in Service for BCT**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**BCT 101 Principles of Construction**

3 cr. hrs. 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.

Offered: Fall, Spring.

**BCT 102 Building Materials**

3 cr. hrs. 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.

Offered: Fall, Spring.

**BCT 104 Introduction to Equipment Maintenance**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 105 Professionalism in Service, Construction Math, Basic Rigging**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**BCT 106 Soldering and Brazing for BCT**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 107 Basic Safety, Hand and Power Tools, Blueprint Reading**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**BCT 109 NCCER Core Introductory Craft Skills**

5.75 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 109A NCCER Core Basic Craft Safety**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109B NCCER Core Basic Construction Math**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109C NCCER Core Introduction to Hand Tools**

.75 cr. hrs. .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. offered: Fall, Spring, Summer.*

**BCT 109D NCCER Core Introduction to Power Tools**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109E NCCER Core Basic Construction Drawings**

.75 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109F NCCER Core Basic Communications Skills**

.5 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109G NCCER Core Basic Employability Skills**

.5 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109H NCCER Core Introduction to Materials Handling**

.5 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 109I NCCER Core Introduction to Basic Rigging**

.5 cr. hrs. .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.*

Offered: Fall, Spring, Summer.

**BCT 111 Basic Safety for the Building Trades**

1 cr. hrs. 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.*

Offered: Fall.

**BCT 112 Construction Mathematics, Communication and Employability**

1 cr. hrs. 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.*

Offered: Fall.

**BCT 113 Hand and Power Tools**

1 cr. hrs. 1 periods (1 lec.)

Selection and safety procedures. Includes trades terms, hand tool, and power tool use to specific jobs in the construction industry.

Offered: Fall.

**BCT 114 Blueprint Reading**

1 cr. hrs. 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.

Offered: Fall.

**BCT 115 Basic Rigging**

1 cr. hrs. 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.

Offered: Fall.



**BCT 120 Blueprint Reading for Construction**

3 cr. hrs. 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.*

*Information: BCT 111, 113, and 114 substitute for BCT 107.*

*Offered: May not be offered this year, check class schedule.*

**BCT 123 Concrete/Masonry**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**BCT 130 EPA Clean Air Act: Section 608**

1 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**BCT 132 Residential and Industrial HVAC I**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 133 Residential and Industrial HVAC II**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 134 Residential and Industrial HVAC III**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 135 National Electrical Code Residential Wiring Applications**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 145 Carpentry I**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 146 Woodworking I**

3 cr. hrs. 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.

Offered: Fall.

**BCT 147 Woodworking II**

3 cr. hrs. 5 periods (2 lec., 3 lab)

A continuation of BCT 146. Advanced topics in woodworking. Includes safety practices; designing and planning; measuring and cutting; planeing, 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.*

Offered: Spring.

**BCT 148 Cabinetmaking I**

3 cr. hrs. 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.*

Offered: Fall.

**BCT 149 Cabinetmaking II**

3 cr. hrs. 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.*

Offered: Spring.

**BCT 150 Plumbing Basics**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 153 Finishing Techniques in Cabinet and Furniture Making**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**BCT 159 Furniture Design and Construction**

3 cr. hrs. 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.

*Offered:* Spring.

**BCT 160 Roof Mounting for Solar Installations**

4 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**BCT 172 Electrical I**

4 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**BCT 173 Electrical II**

4 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**BCT 174 Electrical III**

4 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**BCT 181 Residential and Industrial Plumbing I**

4 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**BCT 182 Residential and Industrial Plumbing II**

4 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**BCT 183 Residential and Industrial Plumbing III**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 184 National Electrical Code I**

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 190 Fieldwork for Construction**

1-8 cr. hrs. 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 repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: BCT course work or field experience will be necessary for success in this course. See a BCT instructor or department chair for more information.*

*Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.*

*Offered: Fall, Spring, Summer.*

**BCT 202 Construction Business Management**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**BCT 204 Construction Surveying**

3 cr. hrs. 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): GTM 105 or MAT 086 or required score on the Mathematics assessment test.*

*Recommendation: Completion of BCT 120 before enrolling in this course.*

*Offered: Fall, Spring.*

**BCT 231 Residential and Industrial HVAC IV**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 232 Residential and Industrial HVAC V**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 233 Residential and Industrial HVAC VI**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 234 Residential and Industrial HVAC VII**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 235 National Electric Code Commercial Wiring Applications**

4 cr. hrs. 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 luminaries, emergency and standby power systems, and overcurrent protection.

*Prerequisite(s): BCT 135.*

*Offered: Fall, Spring, Summer.*

**BCT 236 Residential and Industrial Plumbing IV**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 237 Residential and Industrial Plumbing V**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 238 Residential and Industrial Plumbing VI**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 239 Residential and Industrial Plumbing VII**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**BCT 245 Carpentry II**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**BCT 265 Sustainability for Building Trades**

3 cr. hrs. 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.

Offered: Fall, Spring.

**BCT 271 Electrical IV**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 272 Electrical V**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 273 Electrical VI**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 274 Electrical VII**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 284 National Electrical Code II**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**BCT 286 International Residential Code (IRC) I**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**BCT 287 International Residential Code (IRC) II**

3 cr. hrs. 3 periods (3 lec.)

Continuation of BCT 286. Includes energy efficiency, mechanical systems, plumbing systems, electrical systems, and referenced standards.

*Prerequisite(s): BCT 286.*

Offered: Fall, Spring.

## Business

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### **BUS 100 Introduction to Business**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **BUS 125 eCommerce**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **BUS 148 Ethics in the Workplace**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### **BUS 151 Mathematics of Business**

3 cr. hrs. 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 089 or satisfactory score on the Mathematics assessment test.*

Offered: Fall, Spring, Summer.

### **BUS 205 Statistical Methods in Economics and Business**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

### **BUS 210 International Business**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### **BUS 220 Legal Environment of Business**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**BUS 250 Entrepreneurship**

3 cr. hrs. 3 periods (3 lec.)

Overview of entrepreneurship, providing a sound base for understanding and application of entrepreneurial activity. Includes the entrepreneurial process, accompanied by the skills necessary for success, including without limitation, idea generation, planning, ownership and control, financing, marketing, technology, and management.

*Prerequisite(s): BUS 100.*

*Information: BUS 100 may be waived with consent of instructor.*

*Offered: May not be offered this year, check class schedule.*

**BUS 277 Analytical Methods in Business**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**BUS 296 Independent Study in Business**

1-3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**BUS 299 Co-op: Business**

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**BUS 299WK Co-op Work: Business**

1-8 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*



## Chemistry

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### CHM 121IN Chemistry and Society

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

### CHM 125IN Consumer Chemistry

4 cr. hrs. 6 periods (3 lec., 3 lab)

An overview of the chemistry of everyday products and processes for the non-science major. Includes the chemistry of toothpaste, deodorants, cosmetics, soaps, detergents, food, toys, paints, plastics, and other products commonly found in the kitchen, laundry, bathroom, bedroom, and workshop. Also includes the process of science and the scientific method.

*Information: No previous chemistry background is required.*

Offered: May not be offered this year, check class schedule.

### CHM 128IN Forensic Chemistry

4 cr. hrs. 6 periods (3 lec., 3 lab)

Evolution, practice, and trends in the use of chemistry, physics and biology in forensic studies. Includes the study of scientific methods, applications of molecular biology in DNA analysis, crime scene evidence analysis; i.e., drugs, ballistics, and terrorism. Also includes the discussion of implications and effects these applications have on the law, courts, and society.

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

*Information: Previous knowledge of math, biology, chemistry is advantageous.*

Offered: May not be offered this year, check class schedule.

### CHM 130IN Fundamental Chemistry

5 cr. hrs. 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 089, 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.*

Offered: Fall, Spring, Summer.

### CHM 140IN Fundamental Organic and Biochemistry

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of CHM 130. 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 130/130LB or 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.*

Offered: Fall, Spring, Summer.

### CHM 151IN General Chemistry I

5 cr. hrs. 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 122 and either CHM 080 or CHM 130/130LB or 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.*

Offered: Fall, Spring, Summer.

**CHM 152IN General Chemistry II**

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of CHM 151. 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 or higher and either CHM 151/151LB or 151IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

**CHM 195 Introduction to Research in Chemistry**

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**CHM 196LB Independent Studies in Chemistry**

1-4 cr. hrs. 3-12 periods (3-12 lab)

Laboratory projects varying with students' interests and reasons for enrolling.

Offered: May not be offered this year, check class schedule.

**CHM 235IN General Organic Chemistry I**

5 cr. hrs. 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 152/152LB or 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.

Offered: Fall, Spring, Summer.

**CHM 236IN General Organic Chemistry II**

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of CHM 235. 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 235/235LB or 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.

Offered: Fall, Spring, Summer.

**CHM 290 Chemistry Internship**

1-4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**CHM 295LB Independent Research in Chemistry**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

## Child Development Associate

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### CDA 102 The Child's Total Learning Environment

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

### CDA 103 Curriculum Planning and Schedule Development

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

### CDA 112 Guidance Principles for Encouraging Self-Discipline

1 cr. hrs. 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.*

Offered: Spring.

### CDA 114 Collecting, Organizing and Using Teaching Aids

1 cr. hrs. 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.*

Offered: Fall, Spring.

### CDA 121 Techniques for Observing Children

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

### CDA 126 Literature for Preschool Children

2 cr. hrs. 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.*

Offered: Spring, Summer.

**CDA 138 Building Parent and Classroom Connections**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CDA 155 Understanding How Children Learn and Develop**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CDA 161 Principles of Social Competence**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CDA 170 Ages and Stages of Young Children: Prenatal through Toddler**

2 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CDA 173 Ages and Stages of Young Children: The Preschool Years**

1 cr. hrs. 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 CDA courses require college-level reading and writing.*

Offered: Fall, Spring, Summer.

**CDA 211 Small and Large Muscle Development**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**CDA 222 Elements of Children's Culture**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CDA 224 Learning Theories and Cognitive Development Applications**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**CDA 229 Child Development Associate Assessment Preparation**

3 cr. hrs. 3 periods (3 lec.)

Strategies for completion of the CDA Assessment. Includes documentation requirements, resource file, direct assessment application form, and verification visit requirements.

*Information: All CDA courses require college-level reading and writing.*

Offered: Spring.

**CDA 257 Record Keeping for the Family Child Care Provider**

1 cr. hrs. 1 periods (1 lec.)

Strategies for the development of a record keeping system to use in child care. Includes operating a small business, and organizing records. Also includes income tax forms, special tax liabilities and responsibilities, and important records to retain.

*Information: All CDA courses require college-level reading and writing.*

Offered: Summer.

**CDA 258 Family Child Care as a Small Business**

1 cr. hrs. 1 periods (1 lec.)

Examination of the aspects of family child care as a small business. Includes the role of the family child care provider, licensing and certification, insurance requirements, development of a business plan, and agreements between parents and providers.

*Information: All CDA courses require college-level reading and writing.*

Offered: Summer.

**CDA 259 Balancing Work and Family in a Family Child Care Setting**

1 cr. hrs. 1 periods (1 lec.)

Strategies for reaching a balance between work and family in the child care setting. Includes establishing an appropriate setting, planning the daily schedule, setting boundaries, keeping a balance in your own life, and communicating with parents. Also includes your role as a liaison between family, child, and parent.

*Information: All CDA courses require college-level reading and writing.*

Offered: Summer.

**CDA 271 Professionalism in Childcare**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CDA 273 Ages and Stages: The Middle Childhood Years**

1 cr. hrs. 1 periods (1 lec.)

Examination of the stages of growth and development during the middle childhood years (ages 6 to 8). Includes physical growth, motor development, logical thinking and language skills, and social and emotional growth. Also includes examining developmental concerns and challenges and parental involvement.

*Information: All CDA courses require college-level reading and writing.*

Offered: Summer.

**CDA 275 Transitions**

1 cr. hrs. 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.*

Offered: Summer.

**CDA 276 Preparing a NAEYC Classroom Portfolio**

3 cr. hrs. 3 periods (3 lec.)

Facilitation of the process of NAEYC Classroom Portfolio preparation. Includes the types of documentation that provide evidence that the classroom implementation meets the NAEYC Accreditation criteria. This is part of the NAEYC Self-Study and Self-Assessment process leading to NAEYC Accreditation.

*Information: All CDA courses require college-level reading and writing.*

*Offered: May not be offered this year, check class schedule.*

## Chinese

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CHI 101 Elementary Chinese (Mandarin) I**

5 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**CHI 102 Elementary Chinese (Mandarin) II**

5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**CHI 201 Intermediate Chinese I**

5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**CHI 202 Intermediate Chinese II**

5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Clinical Research Coordinator

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CRC 101 Foundations of Clinical Research**

3 cr. hrs. 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.

*Information: Introductory class for program core.*

*Offered: Fall.*

**CRC 110 Clinical Research Common Terminology**

3 cr. hrs. 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 concurrent enrollment.

Offered: Fall.

**CRC 201 Clinical Research Regulatory Compliance**

3 cr. hrs. 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 of CRC 101, or concurrent enrollment in the course.

Offered: Fall.

**CRC 230 Introduction to Clinical Research Study Protocol**

2 cr. hrs. 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.

*Recommendation:* Completion of or concurrent enrollment in CRC 201.

Offered: Fall.

**CRC 240 Pharmacology for Clinical Trials**

4 cr. hrs. 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.

Offered: Spring.

**CRC 250 Clinical Research Site Coordination and Management**

3 cr. hrs. 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.

Offered: Spring.

**CRC 260IN Lab Skills and Professional Practice**

3 cr. hrs. 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 101, 201, 230, 240 and 250.

Offered: Spring.

**CRC 270 Research Management for Sponsors and CRO's**

3 cr. hrs. 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.*

*Offered: Spring.*

**CRC 291 Clinical Research Coordinator Internship**

1-3 cr. hrs. 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 101, 201, 230, 240, 250 and 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 Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring, Summer.*

**CRC 296 Clinical Research Independent Study: Clinical Project**

1-6 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

## Communication

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CMN 102 Introduction to Speech Communication**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**CMN 110 Public Speaking**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**CMN 120 Business and Professional Communications**

3 cr. hrs. 3 periods (3 lec.)

Study and training in organizational communication within a multicultural and global environment. Includes communication in a multicultural and global business environment, interpersonal communication skills in a culturally diverse workforce; researching, organizing, and delivering informative, instructional, and persuasive presentations; principles of interviewing, group process in business, listening techniques, and types of business presentations.

*Offered: Fall, Spring, Summer.*



**CMN 130 Small Group Discussion**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

## Computer-Aided Design/Drafting

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CAD 101 Computer-Aided Drafting**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 104 Integrated Circuit Layout Fundamentals**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 114 Electronic Manufacturing Processes**

2 cr. hrs. 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.

*Offered:* Spring.

**CAD 117 Print Reading with CAD for Manufacturing**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 127 Introduction to MicroStation**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 142 Introduction to Parametric Modeling: SolidWorks**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 151 Computer-Aided Drafting for Construction**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 152 Technical Drafting**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Concepts, techniques, and applications for mechanical design which includes Computer-Aided Drafting (CAD) standards, documentation, hardware, tolerancing methods and Geometric Dimensioning and Tolerancing (GD&T).

*Prerequisite(s): CAD 142.*

*Offered: Spring.*

**CAD 153 Electro-Mechanical Drafting and Design**

4 cr. hrs. 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.*

*Offered: Spring.*

**CAD 154 Integrated Circuit Layout Design I**

4 cr. hrs. 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.*

*Offered: Spring.*

**CAD 155 Residential Computer-Aided Design**

4 cr. hrs. 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.*

*Offered: Spring.*

**CAD 157 Introduction to Site Development Drafting and Design**

4 cr. hrs. 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.*

*Offered: Spring.*

**CAD 166 Introduction to Revit**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to Building Information Modeling (BIM) for architectural applications using Revit. Includes the basics of 3D parametric software: how to access tools, develop model, build levels and views, create drawing sheets, and plot drawings. Also includes how to integrate knowledge of building systems: site, floor plan, roof plan, building elevations, building and wall sections, and schedules.

*Information: For individuals with no BIM experience.*

*Offered: Fall.*

**CAD 172 Geometric Dimensioning and Tolerancing**

3 cr. hrs. 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.*

*Offered: Spring.*

**CAD 196 Independent Study in Computer-Aided Design: 100 Level**

1-4 cr. hrs. 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.*

*Information: May be taken two times for a maximum of eight credits. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**CAD 199 Co-op: Computer-Aided Drafting**

1 cr. hrs. 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 Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**CAD 199WK Co-op Work: Computer-Aided Design**

1-8 cr. hrs. 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 Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**CAD 203 Advanced Electro-Mechanical Design**

4 cr. hrs. 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*

*Offered: Fall.*

**CAD 204 Integrated Circuit Layout Design II**

4 cr. hrs. 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.*

*Offered: Fall.*

**CAD 206 Commercial Design: Revit**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided Design (CAD) of a commercial building at the intermediate level using Revit. Includes intermediate commercial CAD skills, site, foundation, floor, roof framing, reflected ceiling, mechanical, plumbing, and electrical plans, building and wall sections, building elevations, working drawing coordination, special construction applications, and 3D modeling.

*Prerequisite(s): CAD 166.*

*Offered: Spring.*

**CAD 207 Drafting and Design for Land Development: Civil 3D**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided Drafting (CAD) specific to sites for construction of buildings, roads, and utilities at the intermediate level. 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.

Offered: Fall.

**CAD 222 Introduction to Parametric Modeling: Inventor**

4 cr. hrs. 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.

*Prerequisite(s):* CAD 152.

Offered: Spring.

**CAD 232 Advanced Parametric Modeling: Inventor**

4 cr. hrs. 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.

Offered: Fall.

**CAD 242 Advanced Parametric Modeling: SolidWorks**

4 cr. hrs. 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 152 and 172.

Offered: Spring.

**CAD 247 Transportation Design: MicroStation**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 127. Includes advanced civil drafting technology incorporating surveying and mapping data using MicroStation. Also includes the creation of digital terrain model, horizontal alignment, profiles, vertical alignment, model roadway, creation of cross sections, earthwork quantities, annotation, reports and use viewing tools to review final roadway project.

*Prerequisite(s):* CAD 127, 157.

Offered: Spring.

**CAD 252 Introduction to Parametric Modeling: Creo**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to parametric modeling with Creo. Includes parametric modeling techniques.

Offered: Spring.

**CAD 254 Integrated Circuit Layout Design III**

4 cr. hrs. 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.

Offered: Spring.

**CAD 256 Advanced Commerical Design: Revit**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 257 Advanced Land Development Design: Civil 3D**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 265 Design and Drafting for Sustainability**

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided Design and Drafting (CADD) 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.

*Offered:* Fall.

**CAD 266 Mechanical, Electrical, Plumbing Drafting and Design:Revit MEP**

4 cr. hrs. 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.

*Offered:* Fall.

**CAD 270 Integrated Mechanical/Electro-Mechanical Design**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**CAD 280 Computer-Aided Design Portfolio**

1 cr. hrs. 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.

*Offered:* Spring.

**CAD 282 Advanced Parametric Modeling: Creo**

4 cr. hrs. 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.

*Offered:* Spring.

**CAD 296 Independent Study in Computer-Aided Design: 200-Level**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

# Computer Information Systems

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

## CIS 103 Microsoft Windows Operating System

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

## CIS 104 Computer Fundamentals

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

## CIS 119 Network Essentials

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

## CIS 120 Computer Applications for Business

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

## CIS 121 Web Publishing

3 cr. hrs. 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.

Offered: Fall, Spring.

## CIS 129 Programming and Problem Solving I

5 cr. hrs. 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# or Java.

*Prerequisite(s): MAT 097 or concurrent enrollment.*

Offered: Fall, Spring, Summer.

**CIS 131 Programming and Problem Solving II**

5 cr. hrs. 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.*

*Information: Programming assignments will use the C# or Java language.*

*Offered: Fall, Spring, Summer.*

**CIS 132 Introduction to Computer Forensics**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**CIS 133 Fundamentals of Personal Computer Security**

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**CIS 136 Microcomputer Components**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**CIS 137 Introduction to the UNIX Operating System**

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**CIS 141 Introduction to VB.NET**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**CIS 142 Introduction to C#**

4 cr. hrs. 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.

*Offered:* Spring.

**CIS 162 Database Design and Development**

3 cr. hrs. 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.

*Offered:* Fall, Spring.

**CIS 170 CISCO I: Networking Fundamentals**

5 cr. hrs. 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.

*Prerequisite(s):* CIS 136.

*Recommendation:* Consult instructor for alternative prerequisites before enrolling in this course.

*Offered:* Fall, Spring, Summer.

**CIS 171 CISCO II: Networking Router Technologies**

5 cr. hrs. 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.

*Offered:* Spring.

**CIS 172 CISCO III: Advanced Routing and Switching**

5 cr. hrs. 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.

*Offered:* Fall.

**CIS 173 CISCO IV: Project Based Learning**

5 cr. hrs. 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.

*Offered:* Spring.



**CIS 182 Introduction to ANSI SQL**

3 cr. hrs. 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.

*Offered:* Fall, Spring.

**CIS 185 Introduction to Python**

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Python programming language. Includes statements, syntax, strings, lists, dictionaries, tuples, dynamic types, classes, modules, functions, numeric operations, file I/O, exception handling, and application development using IDLE.

*Prerequisite(s):* CIS 131, CIS 182.

*Offered:* May not be offered this year, check class schedule.

**CIS 187 Data Processing Projects I**

1-3 cr. hrs. 3-9 periods (3-9 lab)

Provides practical work experience with academic study. Includes problem solving, job site interpersonal relations, and directed independent studies of computer-related topics. Also includes lab exercises involving operating system tasks, word processing, spreadsheets, electronic mail, and the Internet.

*Recommendation:* It is recommended that students successfully complete four CIS courses before enrolling in this course.

*Offered:* May not be offered this year, check class schedule.

**CIS 199 Introductory Co-op: Computer Information Systems**

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

**CIS 199WK Introductory Co-op Work: Computer Information Systems**

1-8 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

**CIS 216 Introduction to Wireshark and Network Analysis**

4 cr. hrs. 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.

*Offered:* Spring.

**CIS 218 Introduction to Voice over IP (VoIP)**

4 cr. hrs. 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.*

Offered: Spring.

**CIS 219 Introduction to Virtual Computing**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**CIS 221 Microsoft Windows Server**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**CIS 222 Implementing Windows Network Infrastructure**

4 cr. hrs. 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.*

Offered: Spring.

**CIS 223 Implementing Windows Directory Services**

4 cr. hrs. 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.*

Offered: Fall.

**CIS 224 Designing Windows Network Security**

4 cr. hrs. 4 periods (4 lec.)

Knowledge and skills to analyze business requirements and processes to design a security solution for a Microsoft Windows network. Includes technical requirements, security requirements, security solution on a Windows network, security solution for access between networks, and security for communication channels.

*Prerequisite(s): CIS 223.*

*Information: Preparation for Microsoft certification examination.*

Offered: May not be offered this year, check class schedule.

**CIS 225 Linux (UNIX) System and Network Administration**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**CIS 226 Advanced Linux Networking**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**CIS 228 Fundamentals of Network Security**

4 cr. hrs. 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.*

*Offered: Fall, Summer.*

**CIS 229 Protecting Your PC and Network: CounterMeasures to Network**

4 cr. hrs. 4 periods (4 lec.)

Intrusion Introduction to networking vulnerabilities within various protocols and operating systems. Includes an overview of cyber crime and security issues, networks and the Internet, assessing and securing a personal computer (PC) system, denial of service attacks, malware, and data encryption. Also includes Internet fraud and security, espionage in cyberspace, cyber detective work, and computer security hardware and software.

*Recommendation: Completion of CIS 119 or 170, and 228 before enrolling in this course.*

*Offered: Spring.*

**CIS 235 Advanced Topics in Linux/Unix Security**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**CIS 241 Advanced Visual Basic.NET Programming**

4 cr. hrs. 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.*

*Offered: Fall.*

**CIS 250 Introduction to Assembly Language**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**CIS 265 The C Programming Language**

4 cr. hrs. 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 250 or concurrent enrollment.*

Offered: Fall, Spring.

**CIS 269 Data Structures**

5 cr. hrs. 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 templates, hash tables, sort and search algorithms, file handling and streams, trees, graphs and networks.

*Prerequisite(s): CIS 278.*

Offered: Fall.

**CIS 276 Mobile App Programming: Android I**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**CIS 277 Mobile App Programming: Android II**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**CIS 278 C++ and Object-Oriented Programming**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**CIS 279 Java Programming**

5 cr. hrs. 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, scrollbars, and mouse events. Also includes working with fonts, colors, menus, checkboxes, lists, choices, and other GUI components; and creating and using Applets.

*Prerequisite(s): CIS 131.*

Offered: Fall, Spring.

**CIS 280 Systems Analysis and Design: Concepts and Tools**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**CIS 281 Systems Analysis and Design: Applications**

3 cr. hrs. 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.

*Offered:* Fall.

**CIS 283 Advanced Python**

4 cr. hrs. 4 periods (4 lec.)

Advanced features of the Python programming language. Includes object-oriented programming, database access, GUI development with tkinter, web applications.

*Prerequisite(s):* CIS 185.

*Offered:* May not be offered this year, check class schedule.

**CIS 299 Advanced Co-op: Computer Information Systems**

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**CIS 299WK Adv Co-op Work: Comp Info Sys**

1-8 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

## Computer Software Applications

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CSA 089 Beginning Computer Skills**

1 cr. hrs. 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 and MyPima, email basics, and basic word processing skills.

*Offered:* May not be offered this year, check class schedule.

**CSA 100 Computer Literacy**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**CSA 104 Computer Fundamentals**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**CSA 110 Spreadsheets: Microsoft Excel**

3 cr. hrs. 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, or required score on the mathematics assessment test, or TEC 111.*

*Recommendation: Completion of CSA 089 or basic computer skills, completion of REA 091 or required score on the Compass Reading assessment test before enrolling in this course.*

*Information: Prerequisite may be waived with consent of instructor.*

Offered: Fall, Spring, Summer.

**CSA 120 Word Processing: Word**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**CSA 130 PowerPoint**

3 cr. hrs. 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.*

Offered: Spring.

**CSA 170 Database: Access**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**CSA 182 Microsoft Windows: Current Version**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**CSA 210 Microsoft Excel Fundamentals**

2 cr. hrs. 4 periods (1 lec., 3 lab)

Basic and intermediate functions and features of Microsoft Excel. Includes cells and cell content, data analysis, formula calculations, graphics, workgroup collaborations, format and print worksheets, and managing and modifying workbooks. Also includes preparation for the Microsoft Office Specialist (MOS) Excel Certification.

*Information: Completion of CSA 089, CSA 100, or basic computer skills, and completion of REA 091 or testing above REA 091 on the Reading assessment test before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

## Cooperative Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CED 199 Co-Op: Liberal Arts**

1 cr. hrs. 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): CED 199WK*

*Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**CED 199WK Co-op Work: Liberal Arts**

1-8 cr. hrs. 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): CED 199*

*Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

## Crime Scene Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CSM 100 Intro to Photo Equip and Proc for Crime Scene Investigations**

1 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**CSM 101 Criminalistics**

2 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**CSM 102 Crime Scene Photography**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**CSM 103 Latent Processing**

1 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**CSM 104 Fingerprint Identification**

3 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**CSM 105 Blood Pattern Documentation**

.5 cr. hrs. .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.

*Offered: May not be offered this year, check class schedule.*

**CSM 106 Ballistics**

.5 cr. hrs. .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.

*Offered: May not be offered this year, check class schedule.*

**CSM 107 Courtroom Testimony and Report Writing**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

## Culinary Arts

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**CUL 100 Culinary Bootcamp**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*



**CUL 101 Principles of Restaurant Operations**

3 cr. hrs. 3 periods (3 lec.)

Fundamentals of operating and managing small and large restaurants. Includes concept development; menu development and food purchases; kitchen equipment; budgeting and cost control; financing and leasing; and legal and tax matters. Also includes restaurant organization, job definitions and staffing, employee training, marketing, sales and promotion, and customer relations.

Offered: Fall, Spring.

**CUL 110 Food Service Nutrition**

2 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 115 Food Service Sanitation and Safety**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**CUL 130 Hot Foods I**

3 cr. hrs. 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.

*Corequisite(s): CUL 150, CUL 160*

Offered: Fall, Spring.

**CUL 140 Culinary Principles**

3 cr. hrs. 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, identifying and describing stocks and sauces, herbs and spices, chocolate, and vegetables.

Offered: Fall, Spring, Summer.

**CUL 150 Garde Manger**

3 cr. hrs. 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.

*Corequisite(s): CUL 130, CUL 160*

Offered: Fall, Spring.

**CUL 153 Cakes**

1 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 156 Pies**

1 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 160 Bakery and Pastry Production I**

3 cr. hrs. 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.

*Corequisite(s): CUL 130, CUL 150*

Offered: Fall, Spring.

**CUL 161 Cake Decorating and Candy Making**

3 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 162 Art of Chocolate**

1 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 163 Sauces**

3 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 166 Gluten-Free Baking**

1 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 168 Specialty and Hearth Breads**

3 cr. hrs. 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.

*Information: Consent of Culinary Arts Department is required before enrolling in this course.*

Offered: Fall, Spring.

**CUL 170 Dining Room Operations**

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**CUL 180 Food in History**

3 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 185 Catering Operations**

2 cr. hrs. 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.

Offered: Fall, Spring.

**CUL 199 Co-op: Culinary Arts**

1 cr. hrs. 1 periods (1 lec.)

See Cooperative Education section for description.

Offered: May not be offered this year, check class schedule.

**CUL 199WK Co-op Work: Culinary Arts**

1-3 cr. hrs. 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.

*Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring, Summer.

**CUL 230 Hot Foods II**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**CUL 251 International Cuisine: World of Flavor**

3 cr. hrs. 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.

*Corequisite(s): CUL 230, CUL 260*

Offered: Fall, Spring.

**CUL 260 Bakery and Pastry Production II**

3 cr. hrs. 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*

Offered: Fall, Spring.

**CUL 261 Advanced Cake Decorating**

3 cr. hrs. 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.*

Offered: Fall, Spring.

## Dance

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**DNC 107 Dance Conditioning**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**DNC 130 Tap Dance**

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to tap dancing. Includes class protocol, warm up, standing and center floor work, locomotor work, elements and developing the craft.

*Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**DNC 150 Ballet I**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring.*

**DNC 151 Ballet II**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Spring.*

**DNC 152 Ballet III**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall.*

**DNC 166 Modern Dance I**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring.*

**DNC 167 Modern Dance II**

2 cr. hrs. 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 center floor work, locomotor work, elements, and developing the craft.

*Prerequisite(s): DNC 166.*

*Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Spring.*

**DNC 168 Modern Dance III**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall.*

**DNC 180 Choreography**

2 cr. hrs. 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: Prerequisites may be waived with consent of instructor.*

*Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Spring.

**DNC 200 Dance Appreciation and History**

3 cr. hrs. 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.

Offered: Fall.

**DNC 219 Jazz Dance I**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall.

**DNC 220 Jazz Dance II**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Spring.

**DNC 221 Jazz Dance III**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall.

**DNC 230 Rhythms for Dance**

2 cr. hrs. 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.*

Offered: Summer.

**DNC 269 Dance Ensemble**

3 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**DNC 280 Business for Dance Careers**

3 cr. hrs. 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.

Offered: Spring.

**DNC 296 Independent Studies in Dance**

1-3 cr. hrs. 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: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this class.*

Offered: May not be offered this year, check class schedule.

## Dental Assisting Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**DAE 159 Introduction to Health Care for Dental Assisting**

2 cr. hrs. 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 and psychology, vital signs, communication in the dental environment, job entry skills, and 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.*

Offered: Fall.

**DAE 160 Orientation to Dental Care**

1 cr. hrs. 1 periods (1 lec.)

Overview of the field of dental care. Includes the profession of dentistry, areas of service, and 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.*

Offered: Fall.

**DAE 161 Biomedical Dental Science**

3 cr. hrs. 3 periods (3 lec.)

The biosciences as they relate to the oral cavity. Includes anatomy, physiology, microbiology, oral pathology, and nutrition as each affects total 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.*

Offered: Fall.

**DAE 162 Dental Assisting I**

2 cr. hrs. 2 periods (2 lec.)

Principles and techniques of dental assisting. Includes tooth morphology, of human dentition, hand and rotary dental instruments and their use 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.

Offered: Fall.

**DAE 162LB Dental Assisting I Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DAE 162.

*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.

Offered: Fall.

**DAE 163 Oral Radiography**

2 cr. hrs. 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.

Offered: Fall.

**DAE 163LC Oral Radiography Clinical Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Clinical Lab portion of DAE 163.

*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.

Offered: Fall.

**DAE 164 Dental Materials**

2 cr. hrs. 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; impression materials; gypsum products; miscellaneous dental materials; and 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.

Offered: Fall.

**DAE 164LB Dental Materials Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DAE 164.

*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.

Offered: Fall.

**DAE 165 Dental Assisting Procedures I**

1 cr. hrs. 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.

Offered: Fall.

**DAE 165LC Dental Asst Procdrs Clinical I**

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab portion of DAE 165.

*Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165*

*Offered: Fall.*

**DAE 166 Dental Assisting II**

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of dental assisting. Includes pharmacology and therapeutics, techniques and procedures for emergency medical/dental care as applied to dental assisting, and dental office inventory control.

*Prerequisite(s): DAE 159, 160, 161, 162/162LB, 163/163LC, 164/164LB and 165/165LB.*

*Corequisite(s): DAE 167, DAE 169, DAE 169LC*

*Information: Consent of program coordinator is required before enrolling in this course.*

*Offered: Spring.*

**DAE 167 Dental Assisting III**

3 cr. hrs. 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 and 165/165LB.*

*Corequisite(s): DAE 166, DAE 169, DAE 169LC*

*Information: Consent of program coordinator is required before enrolling in this course.*

*Offered: Spring.*

**DAE 169 Dental Assisting Procedures II**

.5 cr. hrs. .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 and 165/165LC.*

*Corequisite(s): DAE 166, DAE 167, DAE 169LC*

*Information: Consent of program coordinator is required before enrolling in this course.*

*Offered: Spring.*

**DAE 169LC Dental Assisting Procedures Clinical II**

6 cr. hrs. 24 periods (24 lab)

This is the clinical lab portion of DAE 169.

*Prerequisite(s): DAE 159, 160, 161, 162/162LB, 163/163LC, 164/164LB and 165/165LB.*

*Corequisite(s): DAE 166, DAE 167, DAE 169*

*Information: Consent of program coordinator is required before enrolling in this course.*

*Offered: Spring.*

## Dental Hygiene

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**DHE 101 Dental Hygiene I**

2 cr. hrs. 2 periods (2 lec.)

Introduction to the procedures used in the practice of dental hygiene at the beginning level. Includes professionalism and ethics, infection control, body mechanics/ergonomics, evaluation of patient medical and dental history, assessment data, and instrumentation. Also includes removal of soft deposits, fluorides, clinical procedures, and diversity of patient populations. Also includes a laboratory involving practicing dental hygiene procedures on student partners.

*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.*

*Offered: Fall.*



**DHE 101LC Dental Hygiene I Clinical**

3 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of DHE 101.

*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.*

Offered: Fall.

**DHE 104 Dental and Oral Morphology**

1 cr. hrs. 1 periods (1 lec.)

Form and function of primary and permanent dentition. Includes oral cavity proper, form, function and physiology, tooth identification, 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.*

Offered: Fall.

**DHE 104LB Dental and Oral Morphology Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of DHE 104.

*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.*

Offered: Fall.

**DHE 107 Oral Embryology and Histology**

2 cr. hrs. 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, and 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.*

Offered: Fall.

**DHE 112 Preventive Dentistry**

3 cr. hrs. 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.*

Offered: Fall.

**DHE 116 Oral Radiography**

2 cr. hrs. 2 periods (2 lec.)

Principles of dental radiography as a diagnostic aid. Includes radiation production, biology; 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.*

Offered: Fall.

**DHE 116LC Oral Radiography Clinical**

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab portion of DHE 116.

*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.*

Offered: Fall.

**DHE 119 Periodontology**

2 cr. hrs. 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.*

Offered: Spring.

**DHE 120 Oral Pathology**

2 cr. hrs. 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 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.*

Offered: Spring.

**DHE 122 Pharmacology**

2 cr. hrs. 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.*

Offered: Spring.

**DHE 132 Dental Materials**

2 cr. hrs. 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, esthetic restorations, amalgam, cements, impression materials, and gypsum products. Also includes gold and gold casting procedures, dental material radiographic identification, whitening tray fabrication, and review of national board content relating to dental materials.

*Prerequisite(s): DHE 101, 101LC, 104, 104LB, 107, 112, 116, and 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 Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.*

Offered: Spring.

**DHE 132LB Dental Materials Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of DHE 132.

*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.*

*Offered: Spring.*

**DHE 150 Dental Hygiene II**

2 cr. hrs. 2 periods (2 lec.)

Continuation of DHE 101/10LC. 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): DHE101/101LC, 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.*

*Offered: Spring.*

**DHE 150LB Dental Hygiene II Lab**

.5 cr. hrs. 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.*

*Offered: Spring.*

**DHE 150LC Dental Hygiene II Clinical**

3 cr. hrs. 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.*

*Offered: Spring.*

**DHE 160LC Clinical Skills Enhancement I**

.25-2 cr. hrs. 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.*

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring.*

**DHE 196 Independent Studies in Dental Hygiene**

1-4 cr. hrs. 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: 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**DHE 208 Pain and Anxiety Control for Dental Hygiene**

1 cr. hrs. 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, 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.*

Offered: Fall.

**DHE 208LC Pain and Anxiety Control for Dental Hygiene Clinical**

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab portion of DHE 208.

*Prerequisite(s): DHE 119, 120, 122, 132/132LB and 150/150LB/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.*

Offered: Fall.

**DHE 209 Ethics and Practice Management**

1 cr. hrs. 1 periods (1 lec.)

Ethical theories and ethical principles and their application to 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.*

Offered: Fall.

**DHE 212 Nutrition for Oral Health**

1 cr. hrs. 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.*

Offered: Fall.

**DHE 213 Advanced Periodontal Services**

2 cr. hrs. 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.*

Offered: Spring.

**DHE 213CA Advanced Periodontal Services Clinical - A**

1 cr. hrs. 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 cr. hrs. 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.*

*Offered: Spring.*

**DHE 216 Community and Dental Health Education**

3 cr. hrs. 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.*

*Offered: Spring.*

**DHE 250 Dental Hygiene III**

3 cr. hrs. 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.*

*Offered: Fall.*

**DHE 250LC Dental Hygiene III Clinical**

4 cr. hrs. 16 periods (16 lab)

This is the clinical lab portion of DHE 250.

*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.*

*Offered: Fall.*

**DHE 255 Dental Hygiene IV**

1 cr. hrs. 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.*

*Offered: Spring.*

**DHE 255LC Dental Hygiene IV Clinical**

3 cr. hrs. 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.*

Offered: Spring.

**DHE 260LC Clinical Skills Enhancement II**

.25-2 cr. hrs. 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.*

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**DHE 296 Advanced Independent Study: Dental Hygiene**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Dental Laboratory Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**DLT 101 Dental Morphology**

2 cr. hrs. 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.*

Offered: Fall.

**DLT 101LB Dental Morphology Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 101.

*Corequisite(s): DLT 101*

Offered: Fall.

**DLT 102 Non-Metallic Dental Materials**

3 cr. hrs. 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 or concurrent enrollment.*

*Information: Consent of program director is required before enrolling in this course.*

Offered: Fall.

**DLT 103 Complete Dentures**

1 cr. hrs. 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 or concurrent enrollment.*

*Corequisite(s): DLT 103LB*

*Information: Consent of program director is required before enrolling in this course.*

Offered: Fall.

**DLT 103LB Complete Dentures Lab**

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 103.

*Corequisite(s): DLT 103*

Offered: Fall.

**DLT 104 Dental Occlusion**

2 cr. hrs. 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.*

*Corequisite(s): DLT 104LB*

*Information: Consent of program director is required before enrolling in this course.*

Offered: Spring.

**DLT 104LB Dental Occlusion Lab**

2 cr. hrs. 6 periods (6 lab)

This is the Lab portion of DLT 104.

*Corequisite(s): DLT 104*

Offered: Spring.

**DLT 105 Partial Denture Construction**

1 cr. hrs. 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 or concurrent enrollment.*

*Corequisite(s): DLT 105LB*

*Information: Consent of program director is required before enrolling in this course.*

Offered: Spring.

**DLT 105LB Partial Denture Construction Lab**

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 105.

*Corequisite(s): DLT 105*

Offered: Spring.

**DLT 106 Orthodontic Appliances**

2 cr. hrs. 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, 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 or concurrent enrollment.*

*Corequisite(s): DLT 106LB*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: Spring.*

**DLT 106LB Orthodontic Appliances Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 106.

*Corequisite(s): DLT 106*

*Offered: Spring.*

**DLT 108 Laboratory Management**

3 cr. hrs. 3 periods (3 lec.)

Examination of the principles of dental laboratory management. Includes blood born pathogens, infection control guidelines and procedures, Occupational Safety and Health Administration (OSHA) regulations for dental laboratories, 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 or concurrent enrollment.*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: Spring.*

**DLT 201 Dental Laboratory I**

2 cr. hrs. 2 periods (2 lec.)

Introduction to the principles and techniques used in the dental laboratory. Includes fabrication and articulation of removable die models, functional occlusion in wax crown and bridge patterns and in crown and bridge metal castings, spruing, investing, and casting crown and bridge patterns, and repairs and soldering.

*Prerequisite(s): DLT 101.*

*Corequisite(s): DLT 201LB*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

**DLT 201LB Dental Laboratory I Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 201.

*Corequisite(s): DLT 201*

*Offered: May not be offered this year, check class schedule.*

**DLT 202 Dental Metallurgy**

3 cr. hrs. 3 periods (3 lec.)

Examination of metals currently used by the dental technician. Includes introduction to dental alloys, physical and chemical properties of dental alloys, weights, measures, and calculations, alloy processing, equipment calibration, metal treatment and torch techniques, electro polisher and electrolyte solution operation and safety procedures, and metal sensitivities and allergies.

*Prerequisite(s): DLT 101.*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*



**DLT 203 Fixed Bridgework**

1 cr. hrs. 1 periods (1 lec.)

Construction of fixed single tooth restorations and bridgework. Includes prescriptions and work authorizations, fixed restoration design and preparation requirements, waxing, seating, finishing, and evaluation of fixed single tooth restorations and bridgework castings.

*Prerequisite(s): DLT 101 or concurrent enrollment.*

*Corequisite(s): DLT 203LB*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

**DLT 203LB Fixed Bridgework Lab**

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 203.

*Corequisite(s): DLT 203*

*Offered: May not be offered this year, check class schedule.*

**DLT 204 Dental Laboratory II**

2 cr. hrs. 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 101/101LB, 104/104LB, 108, 201/201LB, 202 and 203/203LB.*

*Corequisite(s): DLT 204LB*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

**DLT 204LB Dental Laboratory II Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 204.

*Corequisite(s): DLT 204*

*Offered: May not be offered this year, check class schedule.*

**DLT 206 Dental Ceramics**

2 cr. hrs. 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 101/101LB, 104/104LB, 108, 202 and 203/203LB.*

*Corequisite(s): DLT 206LB*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

**DLT 206LB Dental Ceramics Lab**

2 cr. hrs. 6 periods (6 lab)

This is the Lab portion of DLT 206.

*Corequisite(s): DLT 206*

*Offered: May not be offered this year, check class schedule.*

**DLT 207 Advanced Dental Laboratory Technology**

2 cr. hrs. 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 101/101LB, 104/104LB, 108, 202 and 203/203LB.*

*Corequisite(s): DLT 207LB*

*Information: Consent of program director is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

**DLT 207LB Advanced Dental Laboratory Technology Lab**

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 207.

*Corequisite(s): DLT 207*

*Offered: May not be offered this year, check class schedule.*

## Digital Arts

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**DAR 101 Color Rendering and Theory**

4 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**DAR 102 Fundamentals of Digital Design**

4 cr. hrs. 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.

*Offered: Fall, Spring.*

**DAR 103 Introduction to Digital Arts**

3 cr. hrs. 3 periods (3 lec.)

Theory, history, and practice of digital image manipulation. Includes digitally based technologies, analog to digital conversion, data compression, data security, synchronization of digital materials, standards and intellectual property, civil liberties in the digital age, and digital image sound distribution and exhibition.

*Offered: Fall, Spring, Summer.*

**DAR 111 Typography**

4 cr. hrs. 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 103.*

*Offered: Fall, Spring, Summer.*

**DAR 112 Graphic Design**

4 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**DAR 115 Digital Video Editing**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**DAR 120 Applied Computer Graphics**

4 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**DAR 122 DeskTop Graphics: Adobe Illustrator**

4 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**DAR 124 Writing for Film and Television**

3 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 125 Digital Video Production I**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Principles and techniques of digital video production. Includes digital video cameras, memory and file formats, camera lenses, proper exposure; light, color, and temperature; depth of field, shutter speed effects, lighting, elements of composition, teamwork, and how lighting and composition affects storytelling.

*Prerequisite(s):* DAR 115 and 124.

*Offered:* Fall, Spring.

**DAR 128 Digital Photography I**

4 cr. hrs. 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.

*Information:* There will be additional supply costs beyond course fees.

*Offered:* Fall, Spring, Summer.

**DAR 140 Digital Arts Illustration Studio: Illustration Technique & Media**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 145 Digital Arts Illustration Studio: Character Development for Animation & Print**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 146 Lighting for Photography I**

4 cr. hrs. 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.

*Information:* There may be additional supply costs in addition to course fees. Same as ART 146.

Offered: Fall.

**DAR 173 History of American Cinema**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**DAR 175 Cinematography**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Basic techniques of motion picture production. Includes operation and application of all basic film tools, equipment, and techniques used in cinema production. Also includes practical experience as part of the production team, pre-production, light and image, analysis of film technique, and post-production.

*Prerequisite(s):* DAR 103, 115, 124.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall, Spring.

**DAR 176 Digital Animation**

4 cr. hrs. 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.

Offered: Fall, Spring.

**DAR 177 Location Sound for Film and Video**

4 cr. hrs. 5 periods (3 lec., 2 lab)

Theory and practice of sound recording on location for feature films, documentaries, video productions, and multimedia. Includes technical planning and sound design, miking speech, single camera applications, wireless microphones, combinations of microphones, stereo mixing on location, music in film and television, taping off the telephone, and tape presentation. Also includes electronic new gathering and field production, motion picture sound recording, digital audio tape versus analog recording devices, and techniques and aesthetic considerations.

*Prerequisite(s):* DAR 103, 124.

*Information:* This course will require additional expenses for supplies in additional to course and lab fees.

Offered: Fall.

**DAR 196 Digital Arts Independent Projects: Media Projects**

1-4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**DAR 205 Lighting for Film and Video**

4 cr. hrs. 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 124 and 125 or 175.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

*Offered:* Spring.

**DAR 210 Digital Arts Design Studio: Advertising Design**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 211 Digital Arts Design Studio: Product Design**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 212 Digital Arts Design Studio: Package Design**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 215 Advanced Cinematography**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Tools, techniques, and procedures involved in professional film production. Includes pre-planning a 16mm motion picture production, script breakdown, pre-production and post-production, budgeting, distribution, promotion, and developing a prospectus.

*Prerequisite(s):* DAR 175.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

*Offered:* Fall.

**DAR 217 Post Production for Film**

4 cr. hrs. 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 215.

*Offered:* Spring.

**DAR 221 Photo Image Editing: Adobe PhotoShop**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**DAR 222 Advanced Photo Image Editing: Adobe Photoshop**

4 cr. hrs. 5 periods (3 lec., 2 lab)

Continuation of DAR 221. Includes advanced techniques using current Adobe Photoshop software, hardware, documents, and professional environment.

*Prerequisite(s): DAR 221.*

*Offered: Spring.*

**DAR 223 Digital Drawing and Painting**

4 cr. hrs. 5 periods (3 lec., 2 lab)

Design and illustration on a personal computer system using current paint software. Includes color, drawing and painting tools, editing and text tools, brush customizing, special effects, and applications.

*Prerequisite(s): DAR 101.*

*Offered: Spring.*

**DAR 224 Advanced Screenwriting**

3 cr. hrs. 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.*

*Offered: Spring.*

**DAR 225 Digital Video Production II**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of DAR 125. Production of digital video projects. Includes digital video formats, story elements and writing a script, scripting and visual elements, production plan, analyzing the needs in a production plan, production equipment on location, digital video camera, and recording techniques. Also includes lighting the digital video production, post production equipment and set up, non-linear editing equipment and approach, editing and the visual storyline, and building a portfolio.

*Prerequisite(s): DAR 125.*

*Information: This course will require additional expenses for supplies in addition to course and lab fees.*

*Offered: Spring.*

**DAR 226 DeskTop Publishing for Digital Arts: Adobe InDesign**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**DAR 230 Production Techniques for Print**

4 cr. hrs. 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, 226 and 221 or concurrent enrollment.*

*Offered: Fall, Spring.*

**DAR 232 Digital Photography II**

4 cr. hrs. 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.

*Information:* It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software.

*Information:* 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.

*Information:* There will be additional supply costs beyond course fees.

Offered: Spring.

**DAR 240 Digital Arts Illustration Studio: Book Illustration**

4 cr. hrs. 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.

Offered: Fall, Spring.

**DAR 246 Lighting for Photography II**

4 cr. hrs. 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.

*Information:* Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments.

*Information:* There may be additional supply costs in addition to course fees. Same as ART 246.

Offered: Spring.

**DAR 250 Computer 2D Animation: Adobe After Effects**

4 cr. hrs. 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.

*Prerequisite(s):* DAR 221 or 223.

*Information:* Experience in computer graphics may be substituted for some prerequisites. See a Digital Arts faculty member for information.

Offered: Fall, Spring.

**DAR 251 Computer 3D Animation: Maya**

4 cr. hrs. 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.

Offered: Fall, Spring.

**DAR 252 Interactive Design I**

4 cr. hrs. 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 Flash, Edge, HyperText Markup Language (HTML) 5, and application development; 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.

Offered: Fall, Spring.

**DAR 254 Interactive Design II**

4 cr. hrs. 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 concepts of Flash, Edge, HyperText Markup Language (HTML) 5, and application development; simple graphics and animations, advanced visual aesthetics, business and legal considerations; and publishing, marketing, and distribution.

*Prerequisite(s):* DAR 252.

Offered: Fall, Spring.

**DAR 255 Television Commercial Design**

4 cr. hrs. 5 periods (3 lec., 2 lab)

Designing television commercials. Includes a basic overview of videography, production procedures, conceptualizing, storyboarding, budgeting, casting, videotaping, editing, music, special effects, and legal considerations.

*Prerequisite(s):* DAR 225.

*Information:* Prerequisite(s) may be waived with consent of instructor.

Offered: Spring.

**DAR 256 Web Design I**

4 cr. hrs. 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.

Offered: Fall, Spring.

**DAR 257 Advanced Web Design**

4 cr. hrs. 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.

Offered: Spring.

**DAR 258 Advanced Computer 3D Animation: Maya**

4 cr. hrs. 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.

Offered: Fall.

**DAR 275 Basic Audio Production**

4 cr. hrs. 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.

*Prerequisite(s):* DAR 124.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall, Spring.



**DAR 285 Documentary Television and Film**

4 cr. hrs. 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.

*Prerequisite(s):* DAR 103.

*Information:* This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall.

**DAR 288 Digital Arts Business and Portfolio Capstone**

2 cr. hrs. 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.

Offered: Spring.

**DAR 290E2 Digital Video and Film Arts Internship**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**DAR 290E3 Internship in Digital Arts/Graphics**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**DAR 296 Digital Arts Independent Projects**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Information:* Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

**DAR 29611 Digital Arts Independent Projects: Design**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Information:* Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

**DAR 29612 Digital Arts Independent Projects: Illustration**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Information:* Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

**DAR 29613 Digital Arts Independent Projects: Desktop Publishing**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring.

**DAR 29614 Digital Arts Independent Projects: Interactive Design**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring.

**DAR 29618 Digital Art Independent Proj: Adv Digital Video/Audio/Film**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Completion of twelve credit hours of DAR courses, DAR 196, and consent of instructor are required before enrolling in this course.*

Offered: Fall, Spring, Summer.

**DAR 297 Digital Arts Seminar**

.25-4 cr. hrs. .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.*

*Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Direct Care Professional

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**DCP 102 Direct Care Professional: Aging/Physical Disabilities**

2 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**DCP 103 Direct Care Professional: Alzheimer's/Forms of Dementia**

2 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**DCP 104 Direct Care Professional: Developmental Disabilities**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**DCP 190 Direct Care Professional Internship**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Early Childhood Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ECE 100 Introduction to the Child Care Profession**

2 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**ECE 107 Human Development and Relations**

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**ECE 108 Literature/Social Studies for Children**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ECE 115 Supervision and Administration of Early Childhood Programs**

3 cr. hrs. 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.

*Prerequisite(s): MAT 082.*

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

*Offered: May not be offered this year, check class schedule.*

**ECE 117 Child Growth and Development**

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**ECE 118 Foundations of Early Childhood Education**

3 cr. hrs. 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.*

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

*Offered: Fall, Spring, Summer.*

**ECE 124 Math and Science for Children**

3 cr. hrs. 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.

*Prerequisite(s): MAT 082.*

*Information: All ECE courses require college-level reading and writing skills.*

*Information: This course replaces CDA 142, CDA 143, and CDA 152.*

*Offered: May not be offered this year, check class schedule.*

**ECE 125 Nutrition, Health, and Safety for the Young Child**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ECE 211 Inclusion of Young Children with Special Needs**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ECE 226 Positive Child Guidance**

3 cr. hrs. 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.*

*Information: In order to be successful in all ECE classes, students must have college-level reading and writing skills.*

*Offered: Fall, Spring, Summer.*

**ECE 228 The Young Child: Family, Culture, and Community**

3 cr. hrs. 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.*

*Information: In order to be successful in all ECE classes, students must have college-level reading and writing skills.*

*Offered: Fall, Spring, Summer.*

**ECE 240 Assessment of Young Children**

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**ECE 245 Integrating Learning and Lesson Planning through the Arts**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ECE 246 Integrating Learning and Lesson Planning: Literacy**

3 cr. hrs. 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.*

*Information: 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.*

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

*Offered: Fall, Spring, Summer.*

**ECE 292 Early Childhood Education: Theory to Practice**

4 cr. hrs. 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.*

*Information: Consent of instructor or program coordinator before enrolling in this course.*

*Information: A fingerprint clearance card, TB test, and certain immunizations are required.*

*Information: Students must have college-level reading and writing skills to be successful in ECE courses.*

*Information: 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).*

*Offered: Fall, Spring, Summer.*

## Economics

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

### ECN 150 An Economic Perspective

3 cr. hrs. 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.

*Information: This course is designed to be taken as a single class, as a pre-economics principles course (e.g. before ECN 200, 201 or 202), or as a post-principles course (e.g. after ECN 200, 201, or 202).*

Offered: Fall, Spring.

### ECN 150HC An Economic Perspective: Honors

3 cr. hrs. 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. Also includes additional Honors content.

*Information: This course is designed to be taken as a single class, as a pre-economics principles course (e.g. before ECN 200, 201 or 202), or as a post-principles course (e.g. after ECN 200, 201, or 202).*

*Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.*

*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; “high 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.*

Offered: Fall, Spring.

### ECN 200 Basic Economic Principles

3 cr. hrs. 3 periods (3 lec.)

Examination of microeconomic and macroeconomic theory with economic decision making, economic systems, production possibilities model, and market analysis. Includes micro topics, such as consumer demand, producer supply, and overall price determination. Also includes macro topics, such as goals and problems of the macroeconomy, fiscal policy, budgets, the Federal Reserve, and monetary policy.

*Recommendation: MAT 092.*

*Information: Not open to students who have taken or are taking ECN 201 and/or ECN 202.*

Offered: May not be offered this year, check class schedule.

### ECN 201 Microeconomic Principles

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to individual decision-making units. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes details of consumer demand with elasticity and utility maximization, producer supply with market structures and profit maximization, and overall price determination.

*Recommendation: MAT 092.*

Offered: Fall, Spring, Summer.

### ECN 201HC Microeconomics Principles: Honors

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to individual decision-making units. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes details of consumer demand with elasticity and utility maximization, producer supply with market structures and profit maximization, and overall price determination. 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; “high quality”; peer reviewed paper or project in a format appropriate for this discipline: presentation of research, in class or to a wider audience.

*Recommendation: MAT 092*

*Information: Must qualify for Honors program. ECN 201HC will fulfill any ECN 201 requirement. Faculty or Advisor approval may be required before enrolling in this course.*

Offered: Fall.

**ECN 202 Macroeconomic Principles**

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to the operation of the economy as a whole. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes goals and problems of the macroeconomy, foundations of the macroeconomy, fiscal policy, budgets, money, the role of financial institutions and the Federal Reserve, money creation, monetary theory and policy.

*Recommendation: MAT 092.*

Offered: Fall, Spring, Summer.

**ECN 202HC Macroeconomics Principles: Honors**

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to the operation of the economy as a whole. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes goals and problems of the macroeconomy, foundations of the macroeconomy, fiscal policy, budgets, money, the role of financial institutions and the Federal Reserve, money creation, monetary theory and policy. 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; "high quality", peer reviewed paper or project in a format appropriate for this discipline: presentation of research, in class or to a wider audience.

*Recommendation: MAT 092*

*Information: Must qualify for Honors program. ECN 202HC will fulfill any ECN 202 requirement. Faculty or Advisor approval may be required before enrolling in this course.*

Offered: Spring.

**ECN 296 Independent Study in Economics**

1-3 cr. hrs. 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 200, or 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 Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**EDU 103 Teaching Students with ADD/ADHD**

1 cr. hrs. 1 periods (1 lec.)

Strategies for working with children with attention difficulties. Includes overview Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD), diagnostic procedures, most common treatments, laws pertaining to servicing ADD/ADHD, strategies for the classroom, and overview of resources and organizations.

*Information: May be taken for Professional Development purposes.*

Offered: May not be offered this year, check class schedule.

**EDU 200 Introduction to Education**

3 cr. hrs. 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.

*Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU200 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.*

Offered: Fall, Spring.

**EDU 201 Diversity in Education**

3 cr. hrs. 3 periods (3 lec.)

Examination of diversity that encompasses age, class, gender, race, disability, sexual orientation, and culture. Includes the effects of diversity on the K-12 classroom; demographic changes, multicultural philosophies, and diverse perspectives; and approaches for helping students communicate. Also includes analysis of prejudice, single-group studies, multicultural education, and human relations and capital. Also includes an exploration of children's academic achievement in light of learning and teaching styles, and a reconstructionist approach to classroom diversity and curriculum planning.

*Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU201 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.*

Offered: Fall, Spring.

**EDU 202 Introduction to the Exceptional Learner**

3 cr. hrs. 3 periods (3 lec.)

Foundations of special education, encompassing current educational practices and related educational theories on instruction, classroom management, and assessment. Includes cultural considerations within K-12 special education and students transitioning both within the school and between school and the community. Also includes the role and function of the special education teacher; preparation of lesson plans, assessment, instruction, and technology; and compliance with relevant regulations.

*Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU202 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.*

Offered: Fall, Spring.

**EDU 206 Relationships in Classroom Settings**

3 cr. hrs. 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 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU206 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.*

Offered: Fall, Spring.

**EDU 241 Middle School Curriculum and Instruction**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 242 Middle School Practicum**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.



**EDU 243 ESL Practicum**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 244 Teaching Reading and Writing to ESL Students**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 245 Linguistics**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 246 Assessment of ESL Students**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 247 Family and Community Involvement in ESL Student Instruction**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 252 Reading Diagnosis, Decoding, Remediation and Practicum**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 254 Literacy Development in the Primary Grades/Practicum**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 255 Content Area Reading Middle and Secondary Schools/Practicum**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 257 Special Topics: Children's Literature and Literacy/Practicum**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 268 Issues in Education**

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 270 Educational Technology and Curriculum Integration**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 271 Introduction to Teaching**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 272 Educational Psychology**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDU 273 Introduction to Special Education**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 275 Classroom Management**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 276 Foundation of Reading Instruction**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 277 Phonics Instruction in a Balanced Literacy Setting/Practicum**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 278 Elementary Science Methods and Curriculum Development**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 279 Elementary Math Methods and Curriculum Development**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 280 Social Studies Methods and Curriculum Development**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 285 Secondary Teaching Methods**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 286 Structured English Immersion Methods (Completion)**

3 cr. hrs. 3 periods (3 lec.)

Introduction to Structured English Immersion (SEI) methods designed to meet state standards for pre-service and in-service teachers of English Language Learners (ELL). Includes an examination of ELL proficiency standards, assessment of ELLs, SEI foundations and strategies, using disaggregated data to differentiate instruction and parental involvement.

*Information: Meets SEI Endorsement requirements in conjunction with other coursework. Also meets Arizona Department of Education course requirements.*

*Offered: May not be offered this year, check class schedule.*

**EDU 290 Internship**

8 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 290A Internship I**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 290B Internship II**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 290C Internship III**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDU 290D Internship IV**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Education – General/Post Degree

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

**EDC 240 Adolescent Development**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**EDC 250 Introduction to Teaching**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the 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 ESE 250.*

*Offered: Fall.*

**EDC 251 Educational Psychology**

3 cr. hrs. 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.*

*Offered: Fall.*

**EDC 252 Survey of Exceptional Education**

3 cr. hrs. 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.*

Offered: Spring.

**EDC 253 Educational and Assistive Technology**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDC 254 Classroom Management: Elementary**

3 cr. hrs. 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.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

Offered: Fall.

**EDC 256 Classroom Management: Secondary**

3 cr. hrs. 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.*

Offered: Fall.

**EDC 257 21st Century Learning**

3 cr. hrs. 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.*

Offered: Spring.

**EDC 262 Practicum 1: Elementary**

2 cr. hrs. 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.*

Offered: Fall.

**EDC 263 Practicum 2: Elementary**

2 cr. hrs. 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.*

Offered: Spring.

**EDC 264 Practicum 1: Secondary**

2 cr. hrs. 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. offered: Fall, Spring.*

**EDC 265 Practicum 2: Secondary**

2 cr. hrs. 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.*

Offered: Spring.

**EDC 270 Elementary Methods: English Language Arts**

3 cr. hrs. 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.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

Offered: Fall.

**EDC 271 Elementary Methods: Math**

3 cr. hrs. 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.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

Offered: Fall.

**EDC 272 Elementary Methods: Reading/Phonics**

3 cr. hrs. 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.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

Offered: Summer.

**EDC 273 Elementary Methods: Science/Social Studies**

3 cr. hrs. 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.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

Offered: Summer.

**EDC 274 Elementary Methods: Instruction Across the Curriculum**

3 cr. hrs. 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.

*Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.*

Offered: Spring.

**EDC 275 Secondary Methods: English Language Arts/Social Sciences**

3 cr. hrs. 3 periods (3 lec.)

Instructional methods in English Language Arts and Social Sciences for the secondary teacher. Includes considerations in instructional design related to English Language Arts and Social Sciences such as the Essential Elements of Instruction 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 Social Studies 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.*

Offered: Fall.

**EDC 276 Secondary Methods: Math/Science**

3 cr. hrs. 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.*

Offered: Fall.

**EDC 277 Secondary Methods: Instruction Across the Curriculum**

3 cr. hrs. 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.*

Offered: Spring.

**EDC 291 Student Teaching: Elementary**

8 cr. hrs. 8 periods (8 lec.)

In a grades 1-8 classroom placement, 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 1-8 classroom. EDC 291A and EDC 291B together constitute EDC 291.*

Offered: Spring.

**EDC 291A Student Teaching I: Elementary**

4 cr. hrs. 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.*

Offered: Fall.



**EDC 291B Student Teaching II: Elementary**

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 1-8 Educator Preparation Program (EPP) Internship classroom. Includes 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 EPP Internship approval are required before enrolling in this course. EDC 291A and EDC 291B together constitute EDC 291.*

Offered: Spring.

**EDC 292 Student Teaching: Secondary**

8 cr. hrs. 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.*

Offered: Spring.

**EDC 292A Student Teaching I: Secondary**

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 6-12 Educator Preparation Program (EPP) Internship classroom. 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: Post-Degree Teacher Certification Program approval is required before enrolling in this course. EDC 292A and EDC 292B together constitute EDC 292.*

Offered: Fall.

**EDC 292B Student Teaching II: Secondary**

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 6-12 Educator Preparation Program (EPP) Internship classroom. 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: Post-Degree Teacher Certification Program approval is required before enrolling in this course. EDC 292A and EDC 292B together constitute EDC 292.*

Offered: Spring.

## Education – Special Education

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

**EDS 250 Issues in Special Education**

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**EDS 251 Legal Issues in Special Education**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDS 252 Understanding Individuals with Disabilities Education Act**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDS 253 Development and Implementation of IEPs**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EDS 254 Classroom Management for Special Education**

2 cr. hrs. 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.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

*Information: This class requires a 10-hour special education practicum.*

*Offered: May not be offered this year, check class schedule.*

**EDS 255 Assistive Technology for Special Education Teachers**

3 cr. hrs. 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.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

*Offered: May not be offered this year, check class schedule.*

**EDS 256 Survey of Special Education**

3 cr. hrs. 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.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

*Offered: May not be offered this year, check class schedule.*

**EDS 257 Diagnosis Assessment of Students with Mild-Moderate Disabilities**

3 cr. hrs. 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.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

*Information: This class requires a 15-hour special education practicum.*

*Offered: May not be offered this year, check class schedule.*

**EDS 258A Foundations of Instruction Cross-Categorical**

2 cr. hrs. 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.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

*Offered: May not be offered this year, check class schedule.*

**EDS 259 Teaching Methods Cross-Categorical**

3 cr. hrs. 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.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.*

*Information: This class requires a 15-hour special education practicum.*

*Offered: May not be offered this year, check class schedule.*

**EDS 260 Developmental Reading, Instruction, Assessment, Remediation**

3 cr. hrs. 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.*

*Information: 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 contact the Arizona Department of Education Certification office for specific information.*

*Information: Requires a paid subscription to TaskStream electronic portfolio. Same as EDU260.*

*Offered: May not be offered this year, check class schedule.*

**EDS 290 Internship**

8 cr. hrs. 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.*

*Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.*

*Offered: May not be offered this year, check class schedule.*

**EDS 290A Internship I**

2 cr. hrs. 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.*

*Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.*

*Offered: May not be offered this year, check class schedule.*

**EDS 290B Internship III**

2 cr. hrs. 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.*

*Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.*

*Offered: May not be offered this year, check class schedule.*

**EDS 290C Internship III**

2 cr. hrs. 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.*

*Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.*

*Offered: May not be offered this year, check class schedule.*

**EDS 290D Internship IV**

2 cr. hrs. 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.*

*Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.*

*Offered: May not be offered this year, check class schedule.*

## Education – Special/Post Degree

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

**ESE 250 Introduction to Teaching**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the 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.*

*Offered: Fall.*

**ESE 251 Educational Psychology**

3 cr. hrs. 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.*

Offered: Fall.

**ESE 252 Survey of Exceptional Education**

3 cr. hrs. 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, 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.*

Offered: Spring.

**ESE 253 Educational and Assistive Technology**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**ESE 254 Foundations of Instruction: Mild-Moderate Disabilities**

3 cr. hrs. 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.*

Offered: Fall.

**ESE 255 Classroom Management for Mild-Moderate Disabilities**

3 cr. hrs. 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.*

Offered: Spring.

**ESE 257 21st Century Learning**

3 cr. hrs. 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.*

Offered: Spring.

**ESE 260 Practicum 1: Mild-Moderate Disabilities**

2 cr. hrs. 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.*

Offered: Fall.

**ESE 261 Practicum 2: Mild-Moderate Disabilities**

2 cr. hrs. 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.*

Offered: Spring.

**ESE 270 Methods of Instruction: Students/Mild-Moderate Disabilities**

3 cr. hrs. 3 periods (3 lec.)

Emphasizes the 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 College and Career Readiness Standards (AZCCRS). 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.*

Offered: Fall.

**ESE 271 Mild-Moderate Methods: K-12 Inst. Across the Curriculum**

3 cr. hrs. 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's College and Career Ready Standards (AZCCRS), 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.*

Offered: Summer.

**ESE 272 Developmental Reading, Instruction, Assessment, Remediation**

3 cr. hrs. 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.*

Offered: Summer.

**ESE 273 Diagnosis and Assessment of Mild-Moderate Disabilities**

3 cr. hrs. 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.*

Offered: Spring.

**ESE 290 Student Teaching: Mild-Moderate Disabilities**

8 cr. hrs. 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.*

Offered: Spring.

**ESE 290A Student Teaching I: Mild-Moderate Disabilities**

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades K-12 Educator Preparation Program (EPP) Internship classroom having students with mild-moderate disabilities. 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. ESE 290A and ESE 290B together constitute ESE 290.*

Offered: Fall.

**ESE 290B Student Teaching II: Mild-Moderate Disabilities**

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades K-12 Educator Preparation Program (EPP) Internship classroom having students with mild-moderate disabilities. Includes 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 EPP Internship approval are required before enrolling in this course. ESE 290A and ESE 290B together constitute ESE 290.*

Offered: Spring.

## Educational Technology Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ETT 101 Introduction to Educational Technology**

3 cr. hrs. 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.

Offered: Fall, Spring.

**ETT 103 Introduction to the Internet in Education**

3 cr. hrs. 3 periods (3 lec.)

Basic use of the internet for education. Includes network and telecommunication systems, web-based applications for teaching and learning, and audio-visual technologies. Also includes an introduction to distance education and issues in implementing internet technologies in schools.

Offered: May not be offered this year, check class schedule.

## Electrical Utilities Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**EUT 101 Introduction to Electrical Utilities**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**EUT 102 Electrical Distribution Math**

3 cr. hrs. 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.

Offered: Spring.

**EUT 103 Generation Steam Systems**

3 cr. hrs. 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.

Offered: Spring.

**EUT 104 Overhead and Underground Systems, Hardware, and Equipment**

4 cr. hrs. 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.

Offered: Fall.

**EUT 106 Measuring Electricity**

3 cr. hrs. 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.

Offered: Spring.

## Emergency Medical Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**EMT 089 Skills Reinforcement for EMT 100**

2 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**EMT 090 National Registry Skills Preparation**

.5 cr. hrs. .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.*

Offered: Fall, Spring.

**EMT 091 Ambulance Operations**

2 cr. hrs. 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.*

Offered: Fall, Spring, Summer.



**EMT 092 Cardiac Monitor (EKG) for the EMT**

1.5 cr. hrs. 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.

Offered: Spring, Summer.

**EMT 100 Emergency Medical Technology**

12 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**EMT 106 Overview of Emergency Medical Services**

3 cr. hrs. 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.

Offered: Fall, Spring.

**EMT 109 Human Anatomy and Physiology for EMT**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**EMT 110 Emergency Medical Responder**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**EMT 111 Heartsaver First Aid Provider**

.5 cr. hrs. .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 topic options: 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.

Offered: Fall, Spring, Summer.

**EMT 112 Heartsaver Cardiopulmonary Resuscitation**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**EMT 113 Healthcare Provider Certification: BLS, HIPAA, OSHA and BBP**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EMT 140 Pre-Hospital Trauma Life Support**

1.5 cr. hrs. 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.

*Offered: Fall, Spring.*

**EMT 141 Pre-Hospital Trauma Life Support Refresher**

1.5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**EMT 155 Advanced Medical Life Support (AMLS) Provider**

1.5 cr. hrs. 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.*

*Information: EMT-B will have a separate pre-test and post-test written evaluation for EMT-Basic providers.*

*Offered: Fall, Spring.*

**EMT 158 Transition Training for EMT**

1.5 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring.*

**EMT 159 Cardiopulmonary Resuscitation: Healthcare Provider**

.5 cr. hrs. .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.*

*Information: May be taken six times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Summer.

**EMT 170 Advanced Life Support Operations**

1 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 205 ALS Pharmacology and Medication Administration**

3 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 214 ALS Advanced Special Considerations**

2.5 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 218 Paramedic National Registry Preparation**

3.5 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 219 ALS Foundations**

1.5 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 221 ALS Airway and Ventilation**

1.5 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 222 ALS Patient Assessment and Assessment Based Management**

1.5 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 223 ALS Trauma Emergencies and Systems**

2 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 224 ALS Medical Emergencies**

4 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 225 ALS Special Medical Considerations**

2 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 227LC ALS Practicum: Clinical Lab**

3 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 228LC ALS Practicum: Vehicular Lab**

3 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 230 Basic ECG Interpretation**

1.5 cr. hrs. 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.*

*Information: This course is designed for paramedics and paramedic students.*

Offered: Contact department at 206-6350.

**EMT 233 Basic Cardiac Life Support Instructor**

.75 cr. hrs. .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).*

*Information: AHA certificate is required at the beginning of class.*

*Offered: May not be offered this year, check class schedule.*

**EMT 238 Advanced Cardiac Life Support Instructor**

1 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**EMT 239 Pediatric Advanced Cardiac Life Support Instructor**

1 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**EMT 242 ALS Advanced Foundations**

2 cr. hrs. 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.*

*Offered: Contact department at 206-6350.*

**EMT 244 ALS Advanced Medical Emergencies**

2.5 cr. hrs. 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.*

*Offered: Contact department at 206-6350.*

**EMT 247LC ALS Advanced Practicum: Clinical Lab**

3 cr. hrs. 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.*

*Offered: Contact department at 206-6350.*

**EMT 248LC ALS Advanced Practicum: Vehicular Lab**

3 cr. hrs. 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.*

*Offered: Contact department at 206-6350.*

**EMT 250 Advanced Cardiac Care**

1.5 cr. hrs. 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.

*Offered: Contact department at 206-6350.*

**EMT 251 Advanced Cardiac Care Refresher**

.75 cr. hrs. 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.

Offered: Contact department at 206-6350.

**EMT 252 Pediatric Advanced Life Support**

1.5 cr. hrs. 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).

Offered: Contact department at 206-6350.

**EMT 253 Pediatric Advanced Life Support Refresher**

.75 cr. hrs. 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).

Offered: May not be offered this year, check class schedule.

**EMT 254 Advanced ECG Interpretation**

3 cr. hrs. 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.*

Offered: Contact department at 206-6350.

**EMT 255 Instructional Strategies**

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**EMT 258 Pediatric Education for Pre-Hospital Professionals**

1.5 cr. hrs. 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.

Offered: Fall, Spring.

**EMT 259 Pediatric Education for Pre-Hospital Professionals Refresher**

.75 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**EMT 263 Tox-Medic**

1.5 cr. hrs. 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.

Offered: Contact department at 206-6350.

**EMT 295 ALS Independent Research**

3 cr. hrs. 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.*

*Offered: Contact department at 206-6350.*

## Engineering

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ENG 102IN Problem-Solving and Engineering Design**

3 cr. hrs. 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.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

*Offered: Fall, Spring.*

**ENG 110IN Solid State Chemistry**

4 cr. hrs. 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 151 and MAT 220 or concurrent enrollment.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

*Offered: Spring.*

**ENG 120IN Civil Engineering Graphics and Design**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ENG 122IN Engineering Graphics and Design with Solid Modeling**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ENG 130IN Elementary Surveying**

3 cr. hrs. 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.*

*Offered: Spring.*

**ENG 175IN Computer Programming for Engineering Applications I**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**ENG 210 Engineering Mechanics: Statics**

3 cr. hrs. 3 periods (3 lec.)

Engineering analysis of static mechanical systems. Includes vector algebra, equilibrium of particles and rigid bodies, forces, moments, couples, equivalent force systems, analysis of simple structures (trusses, beams, frames, cables, machines), friction, first and second moments of area (moment of inertia).

*Prerequisite(s): MAT 231, and PHY 210/210LB or 210IN.*

*Offered: Fall, Spring.*

**ENG 218 Fluid Mechanics**

4 cr. hrs. 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.*

*Offered: Fall.*

**ENG 220 Engineering Mechanics: Dynamics**

4 cr. hrs. 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, kinetics of particles and rigid body, and vibration.

*Prerequisite(s): ENG 210 and MAT 241.*

*Offered: Fall, Spring.*

**ENG 230 Mechanics of Materials**

4 cr. hrs. 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, and columns.

*Prerequisite(s): ENG 210.*

*Offered: Fall, Spring.*

**ENG 232 Thermodynamics**

4 cr. hrs. 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 216.*

*Offered: Fall, Spring.*

**ENG 260 Electrical Engineering**

3 cr. hrs. 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 216/216LB or 216IN.*

*Offered: Fall, Spring.*



**ENG 274IN Digital Logic**

4 cr. hrs. 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 216/216LB or 216IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

*Offered:* Fall, Spring.

**ENG 276IN Computer Programming for Engineering Applications II**

3 cr. hrs. 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.

*Offered:* Fall.

**ENG 282IN Basic Electric Circuits**

5 cr. hrs. 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 262, and PHY 216/216LB or 216IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

*Offered:* Fall, Spring.

## English as a Second Language

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ESL 050 English for Beginners**

6 cr. hrs. 6 periods (6 lec.)

Introduction to the basics of English as a second language through an integrated skills approach: reading, writing, listening, and speaking. Includes letters of the alphabet, basic pronunciation rules, day-to-day communication, foundational grammar, writing conventions, and study skills.

*Recommendation:* For students with no previous knowledge of English.

*Offered:* May not be offered this year, check class schedule.

**ESL 060CM Oral Communication for Non-Native Speakers of English I**

4 cr. hrs. 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 permission of instructor.

*Offered:* May not be offered this year, check class schedule.

**ESL 060MT Beginning Writing Mechanics and Technology**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 060PR Pronunciation I**

2 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 060RV Reading and Vocabulary for Non-Native Speakers of English I**

4 cr. hrs. 4 periods (4 lec.)

High beginning-level reading and vocabulary skills for non-native speakers of English.

*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.

*Offered:* May not be offered this year, check class schedule.

**ESL 060WG Writing and Grammar for Non-Native Speakers of English I**

4 cr. hrs. 4 periods (4 lec.)

High beginning-level writing and grammar skills for non-native speakers of English. Includes content-based units: verb tense and mood; sentence structure and parts of speech; sentence and paragraph writing; study strategies; and technology.

*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 permission of instructor.

*Offered:* May not be offered this year, check class schedule.

**ESL 070CM Oral Communication for Non-Native Speakers of English II**

4 cr. hrs. 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, 060RV, and 060WG 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 070CU Survey of American Culture**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 070GR Grammar for Writing II**

3 cr. hrs. 3 periods (3 lec.)

Intermediate level grammar with focus on English in everyday life. Includes verb tense and mood, sentence structure, and parts of speech.

*Prerequisite(s):* ESL 060 with a C or better, or required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL 070 is highly recommended.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

*Offered:* May not be offered this year, check class schedule.

**ESL 070MT Intermediate Writing Mechanics and Technology**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 070PR Pronunciation II**

2 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 070RV Reading and Vocabulary for Non-Native Speakers of English II**

4 cr. hrs. 4 periods (4 lec.)

Low intermediate-level reading and vocabulary skills for non-native speakers of English.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 060RV, 060CM, and 060WG 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 070WG Writing and Grammar for Non-Native Speakers of English II**

4 cr. hrs. 4 periods (4 lec.)

Intermediate-level academic writing and grammar skills. Includes content-based units: verb tense and mood; sentence structure; parts of speech; paragraph writing; study strategies; and technology.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 060WG, 060CM, and 06RV 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 079EI Institute for American English and Culture I**

1-15 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 080CM Oral Communication for Non-Native Speakers of English III**

4 cr. hrs. 4 periods (4 lec.)

High intermediate-level communication skills for increased fluency and comprehension. Includes conversation about academic and social topics with increased proficiency and clarity, listening and speaking strategies, vocabulary, non-verbal communication, critical thinking skills, study strategies, and technology use.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 070CM and (ESL 060RV or ESL 070RV) and (ESL 060WG or ESL 070WG) 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.

*Offered:* Fall, Spring.

**ESL 080MT Advanced Writing Mechanics and Technology**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**ESL 080PR Pronunciation III**

2 cr. hrs. 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.

*Offered:* Fall.

**ESL 080RV Reading and Vocabulary for Non-Native Speakers of English III**

4 cr. hrs. 4 periods (4 lec.)

High intermediate-level reading and vocabulary skills for non-native speakers of English.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 070RV and ESL 060CM and ESL 060WG 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.

*Offered:* Fall, Spring.

**ESL 080WG Writing and Grammar for Non-Native Speakers of English III**

4 cr. hrs. 4 periods (4 lec.)

High intermediate-level academic writing and grammar skills. Includes content-based units: verb tense and mood; sentence structure; parts of speech; paragraph and essay writing; study strategies; and technology.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 070WG and (ESL 060RV or ESL 070RV) and (ESL 060CM or ESL 070CM) 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.

*Offered:* Fall, Spring.

**ESL 085CM Oral Communication for Non-Native Speakers of English IV**

4 cr. hrs. 4 periods (4 lec.)

Advanced-level academic communication skills for increased fluency and comprehension. Includes conversation and formal discussion on a variety of academic topics, academic listening and speaking strategies and practice, presentation skills, academic vocabulary development, study strategies and use of technology.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 080CM and ESL 070RV and ESL 070WG 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.

*Offered:* Fall, Spring.

**ESL 085RV Reading and Vocabulary for Non-Native Speakers of English IV**

4 cr. hrs. 4 periods (4 lec.)

Advanced-level reading and vocabulary skills for non-native speakers of English.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 080RV and ESL 070CM and ESL 070WG 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.

Offered: Fall, Spring.

**ESL 085WG Writing and Grammar for Non-Native Speakers of English IV**

4 cr. hrs. 4 periods (4 lec.)

Advanced-level academic writing and grammar for non-native speakers of English. Includes content based units: verb tense and mood; sentence structure; parts of speech; essay writing; research; study strategies; and use of technology.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 080WG and ESL 070RV and ESL 070CM 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.

Offered: Fall, Spring.

**ESL 088GR Grammar for Writing V**

3 cr. hrs. 3 periods (3 lec.)

Advanced level grammar with a focus on written English in academic contexts. Includes verb tense and mood, sentence structure, structural analysis and other structures.

*Prerequisite(s):* ESL 085 with a C or better, or required score on ESL assessment test.

*Recommendation:* Concurrent enrollment in ESL 088 is highly recommended.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: Spring.

**ESL 088RV Reading and Vocabulary for Non-Native Speakers of English V**

4 cr. hrs. 4 periods (4 lec.)

High advanced-level reading and vocabulary skills for non-native speakers of English.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 085RV and ESL 080CM and ESL 080WG 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.

Offered: Fall, Spring.

**ESL 088TO Comprehensive TOEFL Preparation**

3 cr. hrs. 3 periods (3 lec.)

Comprehensive Test of English as a Foreign Language (TOEFL) test preparation for ESL/EFL students. Includes introduction to the TOEFL and the test-taking strategies, skill review with intensive practice for all four test components: grammar, listening and speaking, Test of Written English (TWE), reading and vocabulary, and the TOEFL guidelines and procedures.

*Prerequisite(s):* ESL 085 with a C or better, or required score on the ESL assessment test.

*Information:* Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

**ESL 088WG Writing and Grammar for Non-Native Speakers of English V**

4 cr. hrs. 4 periods (4 lec.)

High advanced-level academic writing and grammar for non-native speakers of English. Includes content based units: verb tense and mood; sentence structure; parts of speech; essay writing; research; study strategies; and technology.

*Prerequisite(s):* Required score on ESL assessment test OR completion of ESL 085WG and ESL 080RV and ESL 080CM 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.

Offered: Fall, Spring.

**ESL 089EI Institute for American English and Culture II**

1-15 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Environmental Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ENV 105 Humanity and the Environment**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**ENV 105LB Humanity and the Environment Discovery Laboratory**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Experiential Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**EED 110 Prior Learning Assessment**

1-6 cr. hrs. 1-6 periods (1-6 lec.)

Explore credit options through the development of an individual's portfolio. Includes how to collect and present materials which identify, describe, and validate professional training and experiential learning which can be evaluated for college-level credit equivalency. Students in this course must be willing to spend considerable time in the preparation of the portfolio which can be submitted to a portfolio evaluator.

*Information: A maximum of nine credits may be earned for the EMT-Basic program; students must register for two credits.*

*Information: A maximum of 36 credits may be earned for the Fire Science, Corrections, Juvenile Corrections, and Intermediate EMT programs; students must register for three credits.*

*Information: A maximum of 50 credits may be earned for the EMT Paramedic and Law Enforcement programs; students must register for six credits.*

*Information: A maximum of 9 credits may be earned by students who have earned credits previously in this course; students must register for one credit.*

*Offered: May not be offered this year, check class schedule.*

## Fashion Design and Clothing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### FDC 110 Clothing Construction I

3 cr. hrs. 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.

Offered: Fall, Spring.

### FDC 111 Clothing Construction II

3 cr. hrs. 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.*

Offered: Fall, Spring.

### FDC 112 Pattern Fitting

3 cr. hrs. 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.*

Offered: Fall, Spring.

### FDC 121 Flat Pattern Making

3 cr. hrs. 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.*

Offered: Spring.

### FDC 122 History of Clothing

3 cr. hrs. 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.

Offered: Fall.

### FDC 123 Computer Patternmaking I

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### FDC 126 Textiles

3 cr. hrs. 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.

Offered: Spring.

**FDC 131 Fashion Styling**

3 cr. hrs. 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.

Offered: Fall.

**FDC 132 Global Fashion and Culture**

3 cr. hrs. 3 periods (3 lec.)

Human behavior in relationship to clothing, body image, and self-concept. Includes global behavior and dress, clothing as messenger, the ritual of dress, global fashion for the masses, and life stages and clothing and image needs.

Offered: May not be offered this year, check class schedule.

**FDC 135 Fashion Show/Event Planning**

3 cr. hrs. 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.*

Offered: Spring.

**FDC 141 Introduction to Fashion Design**

3 cr. hrs. 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.

Offered: Fall.

**FDC 144 Fashion Drawing**

3 cr. hrs. 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.

*Information: Having prior drawing coursework would be beneficial, recommend ART 110 or 213 before enrolling in this course.*

Offered: Spring.

**FDC 148 Costume Design**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**FDC 196 Independent Studies in Fashion Design and Clothing**

3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Students must have taken at least twelve (12) credit hours in FDC courses before enrolling in this course.*

Offered: May not be offered this year, check class schedule.

**FDC 199 Co-op: Fashion Design and Clothing**

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.



**FDC 199WK Co-op Work: Fashion Design and Clothing**

1-5 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**FDC 211 Clothing Construction III**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FDC 212 Tailoring: Jackets**

3 cr. hrs. 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.*

*Offered: Fall.*

**FDC 213 Tailoring: Pants and Shirts**

3 cr. hrs. 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.*

*Offered: Spring.*

**FDC 214 Bridal and Formal Wear**

3 cr. hrs. 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.*

*Offered: Spring.*

**FDC 215 Sewing with Knits**

3 cr. hrs. 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.*

*Offered: Spring.*

**FDC 218 Introduction to Accessory Design**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FDC 221 Flat Pattern Making II**

3 cr. hrs. 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.

*Offered:* Spring.

**FDC 223 Computer Patternmaking II**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FDC 231 Flat Patternmaking III**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FDC 241 Draping I**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FDC 242 Draping II**

3 cr. hrs. 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):* Completion of FDC 241 with a grade of 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.

*Offered:* May not be offered this year, check class schedule.

**FDC 245 Digital Fashion Design**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FDC 288 Portfolio Preparation**

3 cr. hrs. 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.

*Recommendation: For advanced students who have completed coursework in their specific areas.*

*Information: Portfolio concentrations will be determined in a conference between student and instructor.*

*Information: Same as ART 288.*

Offered: Fall, Spring.

**FDC 289 Fashion Design and Clothing Capstone**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Development and creation of individual original garments incorporating skills acquired through previous courses. Includes capstone project overview, development of a five piece collection, and presenting the garment line.

*Recommendation: Completion of FDC 111, 112, 121, 122, 126, 141, 144, 211, and 241 before enrolling in this course.*

Offered: May not be offered this year, check class schedule.

## Finance

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**FIN 100 Basic Principles of Organizational Finance**

1 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**FIN 107 Business Finance**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**FIN 190 Internship in Finance**

1-3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**FIN 217 Analyzing Financial Data**

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

## Fire Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### FSC 101 Principles of Emergency Services

3 cr. hrs. 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.*

Offered: Fall, Spring.

### FSC 110 Rope I

1 cr. hrs. 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.*

Offered: Fall, Spring.

### FSC 111 Rope II

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### FSC 112 Rope III

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### FSC 118 Swift Water Rescue for First Responders

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### FSC 120 Fire Behavior and Combustion

3 cr. hrs. 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.*

Offered: Spring.

**FSC 123 Building Construction Related to the Fire Service**

3 cr. hrs. 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): 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.*

*Offered: Spring.*

**FSC 124 Fire Prevention**

3 cr. hrs. 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.*

*Offered: Fall.*

**FSC 125 Hydraulics and Water Supply**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 126 Fire Protection Systems in the Fire Service**

3 cr. hrs. 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.*

*Offered: Fall.*

**FSC 127 Principles of Emergency Services Safety and Survival**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FSC 130 Strength and Fitness for the Fire Service**

2.5 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FSC 149 Fire Operations I**

4 cr. hrs. 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 and 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.*

*Offered: Fall, Spring.*

**FSC 150 Fire Operations II**

4 cr. hrs. 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 and 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.*

*Offered: Fall, Spring.*

**FSC 151 Introduction to Fire Science**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 152 Fundamentals of Fire Prevention**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 153 Hazardous Materials**

1.5 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FSC 154 Advanced Fire Prevention**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 160 Wildland Firefighting**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FSC 162 Hydraulics and Fire Suppression**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 163 Fire Apparatus and Equipment**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 167 Rescue Practices for the Fire Service**

2.5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 168 Special Hazard Tactical Problems**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 170 Fire Service Leadership**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 170A Fire Service Leadership I**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 170B Fire Service Leadership II**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 170C Fire Service Leadership III**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 173 Records and Reports**

.25-1 cr. hrs. .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.*

*Offered: Fall, Spring.*

**FSC 174 Fire Investigation I**

3 cr. hrs. 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): FSC 101, 120 and 123 with a C or better.*

*Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.*

*Offered: Spring.*

**FSC 180 Driver Training for Fire Service**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 189 Current Issues in Fire Science**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 230 Fire Investigation II**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 249 Occupational Safety and Health for Emergency Services**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*



**FSC 250 Principles of Fire and Emergency Services Administration**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 251 Hazardous Materials Chemistry**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 252 Fire Service Strategy and Tactics**

3 cr. hrs. 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): FSC 120, 123 and 127 with a C grade or better.*

*Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.*

*Offered: May not be offered this year, check class schedule.*

**FSC 253 Legal Aspects of Emergency Services**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 260 Fire and Emergency Services Instructor**

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 270 Leadership I for Fire Service Executives**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 271 Leadership II for Fire Service Executives**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**FSC 272 Leadership III for Fire Service Executives**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FSC 273 Leadership IV for Fire Service Executives**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FSC 274 Leadership V for Fire Service Executives**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**FSC 280 Fire Chief Preparation**

4 cr. hrs. 4 periods (4 lec.)

Preparation for professional fire personnel to become chief officers. Includes incident command, communication, and disaster management.

*Offered:* May not be offered this year, check class schedule.

## Fitness and Sport Sciences

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**FSS 155 Athletic-Academic Success**

2 cr. hrs. 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 three times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**FSS 208 Professional Activities: Group Fitness**

2 cr. hrs. 3 periods (1 lec., 2 lab)

Fitness and teaching methods for the Fitness and Sport Sciences major to prepare for group fitness certification. Includes introduction to components of group fitness, teaching a fitness class, choreography basics, specific populations and health concerns, and legal and professional responsibilities.

*Prerequisites(s):* FSS 234 or FSS 234A and 234B or concurrent enrollment.

*Recommendation:* FSS 208 and 277 taken concurrently is highly recommended. Completion of WRT 090 or 096 or placement into WRT 101 on the writing assessment is also highly recommended.

*Information:* This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

*Offered:* Fall.

**FSS 218 Professional Activities: Weight Training**

2 cr. hrs. 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.*

*Offered: Spring.*

**FSS 234 Fundamentals of Exercise Science**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FSS 234A Fundamentals of Exercise Science: Module A**

2 cr. hrs. 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.*

*Offered: Fall.*

**FSS 234B Fundamentals of Exercise Science: Module B**

2 cr. hrs. 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.*

*Offered: Spring.*

**FSS 236 Communication and Exercise Adherence**

2 cr. hrs. 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.*

*Offered: Fall.*

**FSS 238 Introduction to Sports Injury Management**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**FSS 241 Nutrition for Exercise and Sport**

3 cr. hrs. 3 periods (3 lec.)

Examination of the relationship between nutrition and the human body. Includes optimal nutrition, energy expenditure, body composition assessment, regulating the body through exercise, and recent research findings.

*Recommendation: MAT 086 (or placement into MAT 092), REA 091 (or placement into REA 112), and WRT 090 or 096 (or placement into WRT 101).*

*Information: This course is intended for the Fitness Professional and professional development for coaches.*

Offered: Fall.

**FSS 260 Business Practices for the Personal Trainer**

3 cr. hrs. 3 periods (3 lec.)

Practices associated with employment and creating and managing a personal training business. Includes introduction to the fitness industry, training business formats, marketing and managing a personal training business, legal and professional responsibilities, financing and accounting principles, and developing a business plan.

*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.*

Offered: Spring.

**FSS 262 Personal Trainer: Special Populations**

2 cr. hrs. 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.*

Offered: Fall.

**FSS 270 Advanced Principles for Athletic Conditioning**

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Advanced theory and application of training principles for athletes. Includes safety and personal health issues, strength and conditioning principles, testing and evaluation, exercise techniques, and program design.

*Recommendation: FSS 218, 234, 276, and WRT 090 or 096 (or placement into WRT 101 on the writing assessment).*

*Information: This course requires physical activity. This course is intended for the Fitness Professions Certificate program and continuing education for fitness professionals, coaches, and physical education teachers.*

Offered: May not be offered this year, check class schedule.

**FSS 271 Sport Psychology**

3 cr. hrs. 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.*

Offered: Spring, Summer.

**FSS 272 Coach Techniques/Practices**

3 cr. hrs. 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.

*Information: To be successful in this course, the student should have basic writing skills equivalent to the completion of WRT 090 or 096.*

Offered: Fall.

**FSS 273 Sport Physiology**

3 cr. hrs. 3 periods (3 lec.)

Principles of fitness training for peak performance. Includes sport physiology and the athlete, training for muscular and energy fitness, designing training programs, and producing peak performance.

*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.*

Offered: Spring.

**FSS 276 Personal Trainer: Muscular Strength, Endurance, Flexibility**

3 cr. hrs. 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): FSS 234A or 234B or concurrent enrollment.*

*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.*

*Information: This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.*

Offered: Fall.

**FSS 277 Personal Trainer: Cardiovascular Endurance/Body Composition**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Assessment and interpretation of testing results for individualized program design for cardiovascular training, and the skill development of body composition assessment techniques. Includes assessment issues, development of SMART (Specific/Measurable/Action-Oriented/Realistic/Time Bound) goals, program development, and special considerations.

*Prerequisite(s): FSS 234A or 234B or concurrent enrollment.*

*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.*

*Information: This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.*

Offered: Spring.

**FSS 280 Lifestyle and Weight Management Consultant**

1 cr. hrs. 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.*

*Information: Students must complete a Nutrition course at the 100 level or higher prior to, or concurrently with this course.*

Offered: Fall.

**FSS 281 Personal Trainer Exam Preparation**

1 cr. hrs. 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.*

Offered: Fall, Spring.

**FSS 285 Principles of Athletic Coaching**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles of athletic coaching. Includes principles of behavior, teaching, physical training, and management.

*Recommendation: WRT 090 or 096 or placement into WRT 101 on the writing assessment.*

Offered: May not be offered this year, check class schedule.

**FSS 291 Fitness and Sport Sciences Internship**

3-4 cr. hrs. 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, progress review, fitness professional systems, and professional development. Also includes employment strategies, final evaluation, employment interview, and fitness professional field experience.

*Prerequisites(s): FSS 208, 218, 234, 236, 276, and 277 or concurrent enrollment.*

*Information: May be taken concurrently with above prerequisites in the last semester and/or program electives. Designed for students in their final semester of course work in the Fitness Professional Certificate program. This course requires approximately 90 - 135 hours of supervised internship time at two or more facilities, in addition to weekly one hour lecture periods.*

Offered: Fall, Spring.

**FSS 296 Independent Study in Fitness and Sport Sciences**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring, Summer.

**FSS 299 Co-op: Fitness Professional**

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: 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.*

Offered: May not be offered this year, check class schedule.

**FSS 299WK Co-op Work: Fitness Professional**

2 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: 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.*

Offered: May not be offered this year, check class schedule.

## Fitness and Wellness

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**FAW 104F1 Conditioning: For Physically Demanding Jobs**

1 cr. hrs. 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, designing an individualized program, programmatic instruction and conditioning, and reassessment and goal setting.

*Information: This course is intended for individuals who are preparing for a job related physical fitness test or who have physically demanding jobs.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Spring.

**FAW 104F2 Conditioning: Speed, Agility, and Quickness**

1 cr. hrs. 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, relationship of sport to health related fitness components, designing an individualized program, programmatic instruction and conditioning, and reassessment and goal setting. Also includes focus on the development of agility, balance, coordination, power, reaction time, and speed in sports or activities requiring these skills.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is intended for individuals who have been participating in regular conditioning or sport activities.*

Offered: Fall, Spring.

**FAW 106F2 Individual Fitness: Running**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is suitable for students who wish to run a few miles a week to those training for distances up to a marathon.*

Offered: May not be offered this year, check class schedule.

**FAW 106F3 Individual Fitness: Swimming**

1 cr. hrs. 2 periods (2 lab)

Cardiovascular conditioning through lap swimming. Includes basic stroke review, techniques of endurance swimming, and assessment and improvement of cardiovascular fitness level.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is not suitable for students with a fear of water or who do not have some initial swimming skill (novices).*

Offered: Fall, Spring.

**FAW 106F4 Individual Fitness: Walking**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

**FAW 108 Senior Fitness**

1 cr. hrs. 2 periods (2 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training for older adults. Includes orientation to the fitness facility, evaluation of personal fitness status and needs, principles of basic program design, and benefits of healthy lifestyle choices. Also includes choosing appropriate exercises to meet individual goals, and developing initial training strategies for improving body total fitness.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is appropriate for healthy older adults who have a desire to maintain or increase their activity levels.*

Offered: May not be offered this year, check class schedule.

**FAW 110F1 Weight Training and Cardiovascular Fitness Level I**

1 cr. hrs. 2 periods (2 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training. Includes orientation to the fitness facility, evaluation of personal fitness status and goal setting, principles of basic program design, and benefits of healthy lifestyle choices.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: 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.*

Offered: Fall, Spring, Summer.

**FAW 110F2 Weight Training and Cardiovascular Fitness Level I Extended**

2 cr. hrs. 4 periods (4 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training. Includes orientation to the fitness facility, evaluation of personal fitness status and goal setting, principles of basic program design, and benefits of healthy lifestyle choices.

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: 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.*

*Information: This course requires twice the time commitment for working out as FAW 110F1.*

Offered: Fall, Spring.

**FAW 110F3 Weight Training and Cardiovascular Fitness Level II**

2 cr. hrs. 4 periods (4 lab)

Continuation of FAW 110F1 or FAW 110F2. Includes orientation to the fitness facility, evaluation of personal fitness status and needs, principles of program design, and benefits of healthy lifestyle choices.

*Prerequisite(s): FAW 110F1 or 110F2.*

*Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: 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.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

Offered: Fall, Spring.

**FAW 112F1 Ballroom/Latin Dance I**

1 cr. hrs. 2 periods (2 lab)

Introduction to ballroom and Latin dancing with emphasis on basic steps, turns, and varied techniques of traditional dances. Includes key components of each dance, floorwork/locomotor skills, dancing as a total activity, and evaluation.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Traditional ballroom dances covered are the six majors: Foxtrot, Waltz, East Coast Swing, Tango, Cha Cha, and Rumba.*

*Information: Other popular social dances that may be covered are the Salsa/Mambo, Night Club Two Step, and West Coast Swing.*

*Information: This course is intended for recreational ballroom dance and will not be accepted for the Associate of Fine Arts Dance Concentration.*

Offered: Fall, Spring.

**FAW 112F2 Ballroom/Latin Dance II**

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 112F1. Includes key components of each dance, floorwork/locomotor skills, dancing as a total activity, and evaluation. Also includes emphasis on combinations, smooth transitions, and complex rhythmic patterns for the six major Ballroom dances.

*Prerequisite(s): FAW 112F1.*

*Information: Other popular social dances that may be covered are the Salsa/Mambo, Night Club Two Step, and West Coast Swing.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is intended for recreational ballroom dance and will not be accepted for the Associate of Fine Arts Dance Concentration.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

Offered: May not be offered this year, check class schedule.



**FAW 113F1 Belly Dance I**

1 cr. hrs. 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 and dancing as a total activity. Also includes history of belly dance; dance terminology; developing stamina, strength, balance, flexibility, endurance, and coordination; organizing dancing patterns into complete routines; and learning to improvise.

*Information: This course is intended for recreational belly dance and will not be accepted for the Associate of Fine Arts Dance Concentration.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall.

**FAW 113F2 Belly Dance II**

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 113F1. Includes key components of each dance, class protocol, dancing as a total activity and evaluation.

*Prerequisite(s): FAW 113F1.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

*Information: This course is for those experienced in Belly Dance.*

Offered: May not be offered this year, check class schedule.

**FAW 123F1 Salsa/Latin Dance I**

1 cr. hrs. 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/locomotor skills, dancing as a total activity, and evaluation. Also includes history of salsa, dance terminology, developing stamina, strength and balance, organizing dancing patterns into complete routines, and learning to improvise.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is intended for recreational Salsa dance and will not be accepted for the Associate of Fine Arts Dance Concentration.*

Offered: Fall, Spring.

**FAW 128F3 Cardio Cross-Training**

1 cr. hrs. 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, and cardio and interval training.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course will utilize a variety of aerobic modalities which may include floor exercise, steps, and interval training.*

Offered: Fall, Spring, Summer.

**FAW 128F4 Cardio-Kickboxing**

1 cr. hrs. 2 periods (2 lab)

Cardio training and muscular exercises generally set to music, performed rhythmically, and patterns simulate the movements of kickboxing (upper and lower body strikes) without physical contact. Includes personal safety and preparation, and personal fitness assessment and activity modifications.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

**FAW 128F6 Cardio: Step**

1 cr. hrs. 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 cardio training.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

**FAW 129F3 Zumba®**

1 cr. hrs. 2 periods (2 lab)

Cardiovascular and muscular exercises inspired by Latin dance and music using Zumba® techniques. Includes personal safety and preparation, personal fitness assessment and activity modifications, and elements of rhythmic aerobic routines.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**FAW 130 Boot Camp Style Circuit Training**

1 cr. hrs. 2 periods (2 lab)

Total body conditioning using various exercises, stations, and equipment which provide a cardiovascular challenge while emphasizing development of muscular strength and endurance. Includes personal safety and preparation, personal fitness assessment and activity modifications, and techniques and considerations for exercise. Also includes work on flexibility, agility, balance, and coordination with emphasis on personal fitness development.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring, Summer.

**FAW 131 Indoor Cycling**

1 cr. hrs. 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. Also includes determination of cardiovascular endurance level and challenging that system, improving local muscular endurance, and flexibility.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring, Summer.

**FAW 132 Kickboxing**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Students are expected to provide their own bag gloves or hand wraps for contact with the bags and pads.*

*Information: Music may be used for motivation during the course but this is not a choreographed class.*

Offered: Fall, Spring, Summer.

**FAW 134F1 Pilates**

1 cr. hrs. 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 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.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**FAW 136 Stretch and Tone**

1 cr. hrs. 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, personal fitness assessment and activity modifications, and techniques and considerations for exercise.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course includes some cardiovascular challenge but primary emphasis is on local muscular development (strength and flexibility) and assessment of personal fitness.*

Offered: Fall, Spring, Summer.

**FAW 138F1 Yoga I**

1 cr. hrs. 2 periods (2 lab)

Introduction to stress reduction through yoga. Includes key components of yoga, essential movements and postures, mind-body practice, and personalizing one's practice.

*Information: May be taken three times for a maximum of three hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*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.*

Offered: Fall, Spring, Summer.

**FAW 138F2 Yoga II**

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 138F1. Includes key components of yoga, essential and complex movements and postures, mind-body practice, and personalizing one's practice.

*Prerequisite(s): FAW 138F1.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is designed for students who have begun to establish a personal home practice and involves a deepening of the foundations established in Yoga I with more challenging postures, breathing techniques, length of sequences of skills, meditation, and philosophy.*

*Information: There are many styles of yoga and the specific philosophy offered in a given section will reflect that of the instructor and may differ slightly from other Yoga II instructors.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

Offered: May not be offered this year, check class schedule.

**FAW 148F1 Golf I**

1 cr. hrs. 2 periods (2 lab)

Fundamentals of golf intended for the novice or player with limited experience. Includes emphasis on grips, stance, swing, shot selection, putting, rules, and etiquette of the game. Also includes key components of each shot, essentials for game play, and game management.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: A required range and/or course fee will be payable to the golf course.*

Offered: Fall, Spring.

**FAW 148F2 Golf II**

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 148F1. Includes review of the fundamentals, key components of each shot, essentials for game play, and game management.

*Prerequisite(s): FAW 148F1.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: A required range and/or course fee will be payable to the golf course.*

*Information: This course is intended for golfers with some experience or who play regularly and wish to refine physical skills and mental strategies to improve performance.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

Offered: May not be offered this year, check class schedule.

**FAW 155F1 Tennis I**

1 cr. hrs. 2 periods (2 lab)

Fundamentals of tennis intended for the novice or player with limited experience. Includes key components of tennis, fundamental stroke development, and game management.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is intended for skill development and recreational play.*

Offered: Fall, Spring.

**FAW 155F2 Tennis II**

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 155F1. Includes review of the key components of tennis, fundamental strokes, shot variations, and game management.

*Prerequisite(s): FAW 155F1.*

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: This course is intended for players with some playing experience who wish to refine physical skills and mental strategies to improve performance.*

*Information: Recreational competitive play with more emphasis on game strategy is stressed.*

*Information: Prerequisite(s) may be waived with consent of instructor.*

**Offered:** May not be offered this year, check class schedule.

**FAW 157F1 Aikido**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

**Offered:** May not be offered this year, check class schedule.

**FAW 163 Self Defense for Women**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

**Offered:** May not be offered this year, check class schedule.

**FAW 165 T'ai-chi Chuan**

1 cr. hrs. 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, and self defense.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

**Offered:** May not be offered this year, check class schedule.

**FAW 167 Baseball**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

**Offered:** Summer.

**FAW 168 Basketball**

1 cr. hrs. 2 periods (2 lab)

Fundamental basketball skills for the recreational player. Includes key components of basketball, individual skills, and team skills.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

**Offered:** Fall, Spring.

**FAW 170 Soccer**

1 cr. hrs. 2 periods (2 lab)

Fundamental soccer skills for the recreational player. Includes key components of soccer, individual skills, and team skills.

*Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

**Offered:** Spring.

**FAW 173 Volleyball**

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**FAW 182 Healthy Living and Wellness**

3 cr. hrs. 3 periods (3 lec.)

Promotion of self-awareness of our daily lifestyle choices which impact our health and well-being. Includes dynamic alignment training, assessment training, wellness model, nutrition, somatic training, relaxation techniques, and self-care techniques.

*Offered: Spring.*

**FAW 183 Lifestyle Wellness Coaching**

2 cr. hrs. 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.

*Offered: Spring.*

**FAW 184 Health, Wellness, and Physical Activity**

3 cr. hrs. 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.

*Offered: Fall.*

## Food Science and Nutrition

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**FSN 127HC Human Nutrition and Biology: Honors**

4 cr. hrs. 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. Faculty or Advisor approval may be 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 format appropriate for this discipline; and presentation of research, in class or to a wider audience.*

*Offered: Fall, Spring.*

**FSN 127IN Human Nutrition and Biology**

4 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**FSN 154 Nutrition**

3 cr. hrs. 3 periods (3 lec.)

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet.

*Information: Same as SSE 154.*

*Offered: Fall, Spring, Summer.*

## French

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**FRE 101 Elementary French I**

4 cr. hrs. 4 periods (4 lec.)

Introduction to French. Includes basic listening, reading, and writing skills and cultural and geographic awareness.

*Offered: Fall, Spring.*

**FRE 102 Elementary French II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of FRE 101. Includes increased proficiency in pronunciation, communication, and basic grammar. Also includes French cultural traditions.

*Prerequisite(s): FRE 101.*

*Offered: Fall, Spring.*

**FRE 201 Intermediate French I**

4 cr. hrs. 4 periods (4 lec.)

Continuation of FRE 102. Includes an intensive review of pronunciation, communication, and advanced grammar. Also includes French cultural traditions.

*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.*

*Offered: Fall.*

**FRE 202 Intermediate French II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of FRE 201. Includes an intensive review of pronunciation, communication, and advanced grammar. Also includes French cultural traditions.

*Prerequisite(s): FRE 201.*

*Information: This course will be conducted primarily in French.*

*Offered: Spring.*

**FRE 296 Independent Study in French**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

## Game Design

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### GAM 101 Game Design I

4 cr. hrs. 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.

Offered: Fall, Spring.

### GAM 102 Game Design II

4 cr. hrs. 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.

Offered: Fall.

### GAM 120 Introduction to Game Programming

4 cr. hrs. 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).

Offered: Spring.

### GAM 150 Game Programming I

4 cr. hrs. 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.

Offered: Spring.

### GAM 151 Game Programming II

3 cr. hrs. 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.

Offered: Fall.

### GAM 201 Game Design III

4 cr. hrs. 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.

Offered: Fall.

### GAM 218 Game Design Portfolio Capstone

4 cr. hrs. 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 201.

Offered: Spring.

**GAM 296 Independent Study in Game Design**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Spring.

## Gender and Women's Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**GWS 100 Introduction to Feminist Studies**

3 cr. hrs. 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.

Offered: Fall.

**GWS 201 La Chicana**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**GWS 202 Sexuality, Gender and Culture**

3 cr. hrs. 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.*

Offered: Fall.

**GWS 280 Feminist Research Methods**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.



## General Technical Writing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### GTW 101 Writing for Trades and Technical Occupations

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## General Technologies Mathematics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### GTM 105 Applied Technical Mathematics

3 cr. hrs. 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): MAT 086 or completion of module 15 in MAT 089 or satisfactory score on the mathematics assessment test.*

*Offered: Fall, Spring.*

### GTM 105V Applied Technical Mathematics for Aviation

3 cr. hrs. 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): MAT 086 or completion of Module 15 in MAT 089 or satisfactory score on the mathematics assessment test.*

*Offered: May not be offered this year, check class schedule.*

## Geography

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### GEO 101 Physical Geography: Weather and Climate

4 cr. hrs. 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.

*Offered: Fall, Spring.*

### GEO 102 Physical Geography: Land Forms and Oceans

4 cr. hrs. 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.

*Offered: Fall, Spring.*

### GEO 103 Cultural Geography

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**GEO 104 World Regional Geography**

3 cr. hrs. 3 periods (3 lec.)

Geographic concepts and information organized by conventional regions and nations. Includes geographic perspectives, physical environment, regions and cultures, realms and population, and the regional framework.

Offered: Fall, Spring.

**GEO 250 Introduction to Medical Geography**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the spatial aspects of health and disease. Includes disease mapping, etiology, statistical associations, health care inequities, and spatial distribution of health care facilities.

Offered: May not be offered this year, check class schedule.

**GEO 265 Mapping Concepts**

1 cr. hrs. 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.

Offered: Fall.

**GEO 267 Introduction to Geographic Information Systems**

3 cr. hrs. 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.

Offered: Fall.

**GEO 284 Computer Cartography and CAD**

3 cr. hrs. 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/GIS 284.

Offered: Spring.

**GEO 296 Independent Studies in Geography**

.5-6 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Geology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**GLG 101IN Physical Geology**

4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**GLG 102IN Historical Geology**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**GLG 110IN Geological Disasters and Environmental Geology**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**GLG 296 Independent Studies in Geology**

.5-3 cr. hrs. 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.*

*Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Geospatial Information Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**GIS 181 Global Positioning Systems Basics**

1 cr. hrs. 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.*

Offered: Fall.

**GIS 265 Mapping Concepts**

1 cr. hrs. 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.*

Offered: Fall.

**GIS 267 Introduction to Geographic Information Systems**

3 cr. hrs. 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.

Offered: Fall.

**GIS 281 Global Positioning Systems**

1 cr. hrs. 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 handheld GPS receivers, data collection with handheld GPS, the use of mapping software with data from handheld 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

Offered: Spring.

**GIS 284 Computer Cartography and CAD**

3 cr. hrs. 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/GEO 284.

Offered: Spring.

**GIS 286 Electronic and Digital Field Mapping**

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## German

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**GER 101 Elementary German I**

4 cr. hrs. 4 periods (4 lec.)

Introduction to the German language in developing proficiency in listening to, speaking, reading, and writing. Includes nouns and pronouns pronunciation, communication, basic grammar, and introduction to German culture.

Offered: Fall, Spring.

**GER 102 Elementary German II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of GER 101. Includes increased proficiency in listening to, speaking, reading, and writing the German language. Also includes pronunciation, communication, intermediate grammar, and German cultural traditions.

*Prerequisite(s):* GER 101.

*Information:* One year of high school German may fulfill prerequisite.

Offered: Fall, Spring.

**GER 201 Intermediate German I**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**GER 202 Intermediate German II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of GER 201. Includes pronunciation, communication, advanced grammar, and German culture.

*Prerequisite(s): GER 201.*

Offered: Fall, Spring.

**GER 296 Independent Study in German**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

## Global Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**GLS 109 Introduction to Global Studies**

3 cr. hrs. 3 periods (3 lec.)

Survey of modern globalization. Includes the study of dimensions of globalization, global organizations, global politics, cultural globalization, the global economy, global environmental independence, and global social movements and counter movements. Also includes global interactions and their current effects on the restructuring of cultural, political, and economic institutions worldwide.

*Information: Same as ANT 109 and SOC 109.*

Offered: May not be offered this year, check class schedule.

## Health Care

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**HCA 103 Orientation to Pharmacology**

3 cr. hrs. 3 periods (3 lec.)

An overview of pharmacology for allied health professionals. Includes pharmacological principles and the chemical, generic, and trade names for drugs. Also includes drug measurement and calculations, prescription preparation, administration, and Federal and Arizona regulations.

Offered: May not be offered this year, check class schedule.

**HCA 119 Orientation to Human Anatomy and Physiology**

2 cr. hrs. 2 periods (2 lec.)

Orientation to basic anatomy and physiology appropriate for the health care setting. Includes the application of medical terminology for the health care environment.

Offered: May not be offered this year, check class schedule.

**HCA 152 Advanced Cardiac Life Support**

2 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**HCA 154 Introduction to Health Care Delivery**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Health Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**HED 136 Introduction to Health Sciences**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**HED 140 First Aid and Cardiopulmonary Resuscitation**

1 cr. hrs. 1 periods (1 lec.)

Theory and practice for treatment of infants, children, and adults. Includes standard first aid and cardiopulmonary resuscitation (CPR).

Offered: May not be offered this year, check class schedule.

## Health Information Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**HIT 100 Introduction to Health Information Management**

3 cr. hrs. 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 in the U.S, public policy, professional roles, legal and regulatory issues, ancillary services, health record and payment systems including the Electronic Health Record (EHR) and computer systems. Also includes health reform initiatives in the U.S.

Offered: Fall.

**HIT 101 Introduction to ICD Coding**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to principles and application of the International Classification of Diseases (ICD) coding system and the Healthcare Common Procedure Coding System (HCPCS). Includes overview of coding, introduction to ICD 9th Revision Clinical Modifications (9-CM), and 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.*

Offered: Spring.

**HIT 102 CPT Coding**

3 cr. hrs. 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 is recommended before enrolling in this course.*

Offered: Spring.

**HIT 105 Medical Terminology**

3 cr. hrs. 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.

Offered: Fall.

**HIT 108 Health Information Employment Policies**

1 cr. hrs. 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.

Offered: Spring.

**HIT 112 Health Insurance and Medical Billing**

3 cr. hrs. 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, 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.*

Offered: Fall.

**HIT 125 Pathophysiology and Pharmacology for HIT**

4 cr. hrs. 4 periods (4 lec.)

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.

Offered: Fall.

**HIT 150 Introduction to Health Management Information Systems**

3 cr. hrs. 3 periods (3 lec.)

Introduction to Health Information Management systems (HIMS). Includes evolution of HIMS; networks, data collection, data sources, secondary data presentations, data quality, data sets and standards, principles and applications of secondary data sources, protected health information, database design and HIMS selection and implementation.

Offered: Spring.

**HIT 165 Medical Office Procedures**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Services and procedures used in a medical office. Includes qualities of the office worker, healthcare industry, communications and human relations, telephone techniques, financial reports, word processing, administrative support and medical billing, filing, mail processing, content of medical health record and documentation, insurance and claims, and employment in a medical office/facility and the interview.

*Recommendation: HIT 105.*

Offered: May not be offered this year, check class schedule.

**HIT 175 Health Information Statistics and Research**

4 cr. hrs. 4 periods (4 lec.)

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.

Offered: Fall.

**HIT 201 Advanced ICD Coding**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Advanced use of references, source documents, and computer software for diagnostic coding in health care settings for outpatient and inpatient hospital coding. Includes interpretation of ICD codes relative to inpatient and outpatient hospital reimbursement, analysis of inpatient and outpatient hospital source documents in a variety of settings to determine proper coding, prospective payment systems, auditing and analysis of patient charts, application of inpatient and outpatient diagnostic codes in the: integumentary, musculoskeletal, respiratory, cardiovascular, digestive, urinary, female and male reproductive, endocrine and nervous systems. Also includes codes for interventional radiology services; development of compliance program for enforcement of regulatory and governmental rules; application of confidentiality and privacy policies and procedures; abstracting data; and computer applications.

*Prerequisite(s): HIT 102.*

*Offered: Spring.*

**HIT 202 Advanced Classification Systems Applications**

3 cr. hrs. 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) and Current Procedural Terminology (CPT) coding and evaluation, Uniform Hospital Discharge Data Set (UHDDS), diagnostic-related group (DRG) guidelines and regulations.

*Prerequisite(s): HIT 101 and HIT 102.*

*Offered: Spring.*

**HIT 210 Medical Quality Assurance and Supervision**

3 cr. hrs. 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.*

*Offered: Spring.*

**HIT 211 Medicolegal Aspects in Health Information Management**

3 cr. hrs. 3 periods (3 lec.)

Introduction to 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, 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.*

*Offered: Fall.*

**HIT 225 Advanced Health Management Information Systems**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Applied concepts in Health Information Management (HIM) Systems. Includes healthcare legislation and standards, federal regulations, electronic health record system implementation and applications, roles and responsibilities of health care providers, information security and use of real world software applications.

*Offered: Fall.*

**HIT 290 Health Information Technology Internship**

3 cr. hrs. 11 periods (1 lec., 10 lab)

Volunteer Health Information Technology field experience at an approved work site. Includes communications, positive work attitudes, ethics, progress review, health information systems, professional development, employment strategies, and final evaluation within a classroom seminar setting.

*Prerequisite(s): HIT 105 and permission of the instructor.*

*Information: Designed for students in their final semester of course work in the Health Information Technology option.*

*Offered: May not be offered this year, check class schedule.*



## History

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### HIS 101 Introduction to Western Civilization I

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### HIS 101HC Introduction to Western Civilization I: Honors

3 cr. hrs. 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.*

Offered: Fall.

### HIS 102 Introduction to Western Civilization II

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### HIS 102HC Introduction to Western Civilization II: Honors

3 cr. hrs. 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 Honors content.

*Prerequisite(s): Must qualify for Honors program.*

*Information: Faculty or Advisory 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.*

Offered: May not be offered this year, check class schedule.

### HIS 105 Introduction to Chicano Studies

3 cr. hrs. 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.

Offered: Fall, Spring.

### HIS 113 Chinese Civilization

3 cr. hrs. 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- ).

Offered: Spring.

### HIS 114 Japanese Civilization

3 cr. hrs. 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); Meiji Period (1868-1912); Taisho Period (1912-1925); Showa Period (1926-1989); and Heisei Period (1990-present).

Offered: Fall.

**HIS 122 Tohono O'odham History and Culture**

3 cr. hrs. 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.*

*Offered: Spring.*

**HIS 124 History and Culture of the Yaqui People**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**HIS 127 History and Culture of the Mexican-American in the Southwest**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**HIS 141 History of the United States I**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**HIS 141HC History of the United States I: Honors**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**HIS 142 History of the United States II**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**HIS 142HC History of the United States II: Honors**

3 cr. hrs. 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. 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.

Offered: May not be offered this year, check class schedule.

**HIS 147 History of Arizona**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**HIS 148 History of Indians of North America**

3 cr. hrs. 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.

Offered: Spring.

**HIS 150 African-American History and People**

3 cr. hrs. 3 periods (3 lec.)

African-American history from the colonial period to the present. Includes identity, double consciousness, culture and arts, and political protest.

Offered: May not be offered this year, check class schedule.

**HIS 160 Latin America Before Independence**

3 cr. hrs. 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.

Offered: Fall.

**HIS 161 Modern Latin America**

3 cr. hrs. 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.

Offered: Spring.

**HIS 180 Women in Western History**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**HIS 232 The Politics and History of Immigration**

3 cr. hrs. 3 periods (3 lec.)

Examines the politics of immigration in the United States and the phenomenon of emigration in a global context. Includes analyses of the history of immigration as a result of the country's political economy and its evolution and the role of immigration in the socio-political and economic development of the nation.

*Information: Same as POS 232.*

*Offered: May not be offered this year, check class schedule.*

**HIS 240 Medieval History**

3 cr. hrs. 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.

*Offered: Fall.*

**HIS 245 Abraham Lincoln and the American Civil War**

3 cr. hrs. 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 of the impact of the Civil War on the United States and the 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.

*Offered: May not be offered this year, check class schedule.*

**HIS 254 History of Women in the United States: The 20th Century**

3 cr. hrs. 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.

*Offered: Fall.*

**HIS 274 The Holocaust**

3 cr. hrs. 3 periods (3 lec.)

Examines the causes, events and legacies of the Nazi assault on humanity. Includes the history of hate against the Jews in Europe, historical antecedents and preconditions of the Holocaust, the Third Reich and the creation of a racial state, the "Final Solution" and the aftermath.

*Offered: Fall, Spring, Summer.*

**HIS 280 History of the World Wars**

3 cr. hrs. 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.

*Offered: Spring.*

**HIS 281 Cold War: Soviet Confrontations and Vietnam**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**HIS 296 Independent Study in History**

1-3 cr. hrs. 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.*

*Information: May be taken two times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

## Histotechnology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### HTP 101 Histology

4 cr. hrs. 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.

Offered: Fall.

### HTP 105 Histotechniques I

4 cr. hrs. 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.

Offered: Spring.

### HTP 200 Histotechniques II

4 cr. hrs. 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.

Offered: Fall.

### HTP 201 Histotechniques III

4 cr. hrs. 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.

Offered: Fall.

### HTP 202 Histotechniques IV

3 cr. hrs. 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).

Offered: Fall.

### HTP 291 Histotechnology Internship

1-5 cr. hrs. 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.

Offered: Fall.

## Honors Program

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

### HON 101 Honors Colloquium

3 cr. hrs. 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.*

Offered: Fall, Spring.

### HON 210 College Honors Advisory Council

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

### HON 244 Honors Field Excursions

1-3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### HON 280 Advanced Honors Colloquium

1-3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### HON 296 Honors Independent Study Project

1-3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Hotel and Restaurant Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### HRM 100 Introduction to the Hospitality Industry

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### HRM 101 Front Office Procedures

3 cr. hrs. 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.

Offered: Fall, Spring.

### HRM 104 Hotel Food and Beverage Management

3 cr. hrs. 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.

Offered: Fall.

### HRM 110 Food Service Systems Management

3 cr. hrs. 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.

Offered: Fall, Spring.

### HRM 111 Commercial Food

3 cr. hrs. 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.*

Offered: Fall, Spring.

### HRM 120 Meetings and Convention Management

3 cr. hrs. 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.

Offered: Spring.

### HRM 140 Introduction to Bar and Beverage Management

3 cr. hrs. 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.*

Offered: Spring.

**HRM 150 Hospitality Property Management**

3 cr. hrs. 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.

Offered: Spring.

**HRM 199 Introductory Co-op: Hotel and Restaurant Management**

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**HRM 199WK Co-op Work: Hotel and Restaurant Management**

1-8 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**HRM 210 Managing Customer Service for the Hospitality Industry**

3 cr. hrs. 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.*

Offered: Spring.

**HRM 235 Hospitality Law**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**HRM 245 Hospitality Human Resource Management**

3 cr. hrs. 3 periods (3 lec.)

Examination of personnel issues in hospitality management. Includes recruitment, selection, orientation, training, wages and benefits, legal issues, and employee evaluation.

*Prerequisite(s): HRM 100 with a grade of C or better.*

Offered: May not be offered this year, check class schedule.



**HRM 299 Intro to Advanced Co-op: Hotel and Restaurant Management**

1 cr. hrs. 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.*

*Offered: Fall, Spring.*

**HRM 299WK Advanced Co-op Work: Hotel and Restaurant Management**

1-3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Human Resources Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**HRS 101 Introduction to Human Resources Management**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**HRS 102 Human Resource Law**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**HRS 103 Benefits and Compensation**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**HRS 104 Job Requirements, Recruitment, and Personnel Selection**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**HRS 105 Training and Development**

3 cr. hrs. 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.

Offered: Fall, Spring.

**HRS 106 Labor Relations**

3 cr. hrs. 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.

Offered: Fall, Spring.

## Humanities

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**HUM 131 Mythology**

3 cr. hrs. 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.

Offered: Fall, Spring.

**HUM 196 Independent Studies in Humanities**

3 cr. hrs. 3 periods (3 lec.)

Reading and research to be determined between the student and the instructor.

Offered: Fall, Spring.

**HUM 251 Western Humanities I**

3 cr. hrs. 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.

Offered: Fall, Spring.

**HUM 252 Western Humanities II**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**HUM 253 Western Humanities III**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**HUM 260 Intercultural Perspectives**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

## Industrial and Commercial Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ICT 100 Energy Industry Fundamentals**

3 cr. hrs. 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.

Offered: Fall.

**ICT 101 Introduction to the Natural Gas Industry**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the natural gas industry. Includes the history of the gas industry, safety issues, and field operations.

Offered: Fall.

**ICT 102 Introduction to Natural Gas Operations**

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Industrial Maintenance

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**IMO 121 NCCER Industrial Maintenance Electrical and Instrumentation L1**

9.5 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**IMO 121A NCCER Industrial Maintenance Electrical and Instrumentation L1 Trade Orientation**

.5 cr. hrs. .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.*

Offered: May not be offered this year, check class schedule.

**IMO 121B NCCER Industrial Maintenance Electrical and Instrumentation L1 Tools Orientation**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121C NCCER Industrial Maintenance Electrical and Instrumentation L1 Fasteners/Anchors**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121D NCCER Industrial Maintenance Electrical and Instrumentation L1 Oxyfuel Cuttings**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121E NCCER Industrial Maintenance Electrical and Instrumentation L1 Gaskets and Packing**

.75 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121F NCCER Industrial Maintenance Electrical and Instrumentation L1 Craft Math**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121G NCCER Industrial Maintenance Electrical and Instrumentation L1 Construction Drawings**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121H NCCER Industrial Maintenance Electrical and Instrumentation L1 Pumps and Drivers**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121I NCCER Industrial Maintenance Electrical and Instrumentation L1 Valves**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121J NCCER Industrial Maintenance Electrical and Instrumentation L1 Test Equipment**

.5 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121K NCCER Industrial Maintenance Electrical and Instrumentation L1 Material Handling/Rigging**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121L NCCER Industrial Maintenance Electrical and Instrumentation L1 Mobile and Support Equipment**

.75 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 121M NCCER Industrial Maintenance Electrical and Instrumentation L1 Lubrication**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**IMO 122 NCCER Industrial Maintenance Electrical and Instrumentation L2**

11.25 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122A NCCER Industrial Maintenance Electrical and Instrumentation Industrial Safety**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122B NCCER Industrial Maintenance Electrical and Instrumentation National Electrical Code®**

.5 cr. hrs. .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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122C NCCER Industrial Maintenance Electrical and Instrumentation Electrical Theory**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122D NCCER Industrial Maintenance Electrical and Instrumentation Alternating Current**

1.25 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122E NCCER Industrial Maintenance Electrical and Instrumentation Test Equipment**

.75 cr. hrs. .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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122F NCCER Industrial Maintenance Electrical and Instrumentation Flow/Pressure/Level/Temp**

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**IMO 122G NCCER Industrial Maintenance Electrical and Instrumentation Process Mathematics**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 122H NCCER Industrial Maintenance Electrical and Instrumentation Hand Bending**

.75 cr. hrs. .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.

*Offered:* Fall, Spring, Summer.

**IMO 122I NCCER Industrial Maintenance Electrical and Instrumentation Tubing**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 122J NCCER Industrial Maintenance Electrical and Instrumentation Tube and Pipe System Maintenance**

.5 cr. hrs. .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.

*Offered:* Fall, Spring, Summer.

**IMO 122K NCCER Industrial Maintenance Electrical and Instrumentation Introduction to Instrument Drawings and Documents**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 122L NCCER Industrial Maintenance Electrical and Instrumentation Conductors and Cables**

.75 cr. hrs. .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.

*Offered:* Fall, Spring, Summer.

**IMO 122M NCCER Industrial Maintenance Electrical and Instrumentation Conductor Termination and Splices**

.75 cr. hrs. .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 curricula.

*Offered:* Fall, Spring, Summer.



**IMO 123 NCCER Industrial Maintenance Electrical and Instrumentation L3**

12.25 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**IMO 123A NCCER Industrial Maintenance Electrical and Instrumentation L3 Hazardous Locations**

.75 cr. hrs. .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.*

*Offered: Fall, Spring, Summer.*

**IMO 123B NCCER Industrial Maintenance Electrical and Instrumentation L3 Electronic Components**

.75 cr. hrs. .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.*

*Offered: Fall, Spring, Summer.*

**IMO 123C NCCER Industrial Maintenance Electrical and Instrumentation L3 Electrical Instrumentation Drawings**

.75 cr. hrs. .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.*

*Offered: Fall, Spring, Summer.*

**IMO 123D NCCER Industrial Maintenance Electrical and Instrumentation L3 Motor Controls**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 123E NCCER Industrial Maintenance Electrical and Instrumentation L3 Distribution Equipment**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 123F NCCER Industrial Maintenance Electrical and Instrumentation L3 Transformer Applications**

.5 cr. hrs. .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 curricula.

Offered: Fall, Spring, Summer.

**IMO 123G NCCER Industrial Maintenance Electrical and Instrumentation L3 Conductor Selection and Calculation**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 123H NCCER Industrial Maintenance Electrical and Instrumentation L3 Temporary Grounding**

1 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**IMO 123I NCCER Industrial Maintenance Electrical and Instrumentation L3 Layout of Tubing Grid Piping Systems**

1.5 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**IMO 123J NCCER Industrial Maintenance Electrical and Instrumentation L3 Machine Bending Conduit**

1 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**IMO 123K NCCER Industrial Maintenance Electrical and Instrumentation L3 Hydraulic Controls**

1 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

**IMO 123L NCCER Industrial Maintenance Electrical and Instrumentation L3 Pneumatic Controls**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 123M NCCER Industrial Maintenance Electrical and Instrumentation L3 Motor-Operated Valves**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 124 NCCER Industrial Maintenance Electrical and Instrumentation L4**

11 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 124A NCCER Industrial Maintenance Electrical and Instrumentation L4 Standby and Emergency Systems**

1 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**IMO 124B NCCER Industrial Maintenance Electrical and Instrumentation L4 Process Control Elements**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 124C NCCER Industrial Maintenance Electrical and Instrumentation L4 Instrument Calibration**

.75 cr. hrs. .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.

*Offered:* Fall, Spring, Summer.

**IMO 124D NCCER Industrial Maintenance Electrical and Instrumentation L4 Pneumatic Control Valves**

2.5 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 124E NCCER Industrial Maintenance Electrical and Instrumentation L4 Performing Loop Checks**

.5 cr. hrs. .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.

*Offered:* Fall, Spring, Summer.

**IMO 124F NCCER Industrial Maintenance Electrical and Instrumentation L4 Troubleshooting Loop**

.75 cr. hrs. .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.

*Offered:* Fall, Spring, Summer.

**IMO 124G NCCER Industrial Maintenance Electrical and Instrumentation L4 Process Control Loops**

1.5 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 124H NCCER Industrial Maintenance Electrical and Instrumentation L4 Data Networks**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**IMO 124I NCCER Industrial Maintenance Electrical and Instrumentation L4 Programmable Logic Controllers**

1 cr. hrs. 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.

*Offered:* Fall Spring, Summer.

**IMO 124J NCCER Industrial Maintenance Electrical and Instrumentation L4 Distributed Control System**

1 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**Integrated College Skills**

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ICS 079 Integrated College Skills (Reading and Writing)**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**ICS 081 Integrated College Skills (Mathematics)**

3 cr. hrs. 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.

*Offered:* Fall, Spring.

**International Business Studies**

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**IBS 120 Cultural Environment of International Business**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**Interpreter Training**

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ITP 201 Ethics and Social Justice of Interpreting**

3 cr. hrs. 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.

*Offered:* Fall, Spring.

**ITP 211 Fundamentals of Interpreting I**

3 cr. hrs. 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.*

Offered: Fall.

**ITP 212 Fundamentals of Interpreting II**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

## Italian

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**ITA 101 Elementary Italian I**

4 cr. hrs. 4 periods (4 lec.)

Introduction to Italian. Includes basic oral and written forms, grammatical structures, interpersonal transactions, and geographical and cultural awareness.

Offered: Fall.

**ITA 102 Elementary Italian II**

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

## Japanese

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**JPN 085 Introductory Japanese**

4 cr. hrs. 4 periods (4 lec.)

Elementary Japanese conversation. Includes an overview of the Japanese language, writing and pronunciation, and useful daily expressions. Also includes Japanese culture and communication.

Offered: May not be offered this year, check class schedule.

**JPN 101 Elementary Japanese I**

5 cr. hrs. 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.

Offered: Fall, Spring.

**JPN 102 Elementary Japanese II**

5 cr. hrs. 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.*

Offered: Fall, Spring.



**JPN 201 Intermediate Japanese I**

5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**JPN 202 Intermediate Japanese II**

5 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Journalism

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**JRN 101 Introduction to Reporting and Media Writing**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**JRN 102 Survey of Media Communications**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**JRN 185 Newspaper Publishing**

3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring.*

**JRN 186 Writing for the Web**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**JRN 235 Writing/Reporting for Broadcast Journalism**

3 cr. hrs. 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.*

Offered: Fall.

**JRN 240 Editing, Layout, and Design**

3 cr. hrs. 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.

Offered: Fall, Spring.

**JRN 260 Magazine and Feature Writing**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**JRN 280 Photojournalism**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**JRN 285 Advanced News Publication**

3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**JRN 290 Journalism Internship**

1-5 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

## Korean

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### KOR 101 Elementary Korean I

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### KOR 102 Elementary Korean II

4 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

## Landscape Technician

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### LTP 119 Plants for Landscape Design

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### LTP 129 Landscape Design

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### LTP 140 Landscape Sustainability and Water Harvesting

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Latin

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### LAT 101 Elementary Latin I

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Latin language through reading and composition. Includes all regular verb tenses in active voice; future perfect and pluperfect tenses in passive voice; the irregular verbs *sum*, *possum*, *eo*, *volo*, *nolo*, *fero*; all five noun declensions; all classes of adjective declensions; present infinitives; commands and questions; adverbs; pronouns: personal, demonstrative, reflexive, and relative pronouns; subordinate clauses; expressions of time and place; numerals; participles: present, perfect passive, and future active; and topics in ancient Roman history and culture.

Offered: May not be offered this year, check class schedule.

**LAT 102 Elementary Latin II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of LAT 101. Comparative study of English and Latin grammar. Includes emphasis on analytical thinking, memorization, and familiarization with new terminology. Also includes translation to English from original works in Latin and from English to Latin, and topics in ancient Roman history and culture.

*Prerequisite(s):* LAT 101.

*Offered:* May not be offered this year, check class schedule.

## Law Enforcement Academy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**LEA 110 Law Enforcement Academy Part I**

24 cr. hrs. 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 cr. hrs. 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 281

**LIS 150 Social Media and Ourselves**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

## Literature

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**LIT 124 Introduction to Writers of the Southwest**

3 cr. hrs. 3 periods (3 lec.)

Introduction to reading 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.

*Information:* Students do not need to have a writing prerequisite.

*Offered:* May not be offered this year, check class schedule.

**LIT 224 Southwestern Literature**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**LIT 225 Science Fiction Literature**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**LIT 231 Introduction to Shakespeare**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**LIT 240 American Literature of Opposition**

3 cr. hrs. 3 periods (3 lec.)

Protest and anti-establishment literature of the nineteenth and twentieth centuries in a variety of genres and media. Includes oppositional works from across the political and cultural spectrums. Also includes essay writing and critical thinking. May include contemporary Internet and alternative media.

*Prerequisite(s): WRT 102 or 108.*

Offered: May not be offered this year, check class schedule.

**LIT 261 Modern Literature**

3 cr. hrs. 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.

*Prerequisite(s): WRT 102 or 108.*

Offered: Fall, Spring.

**LIT 261HC Modern Literature: Honors**

3 cr. hrs. 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.*

Offered: Spring.

**LIT 262 American Poets**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**LIT 263 Postmodern Literature**

3 cr. hrs. 3 periods (3 lec.)

Examination of postmodern literary works and voices from the United States, South America, Europe, and a variety of other nations and cultures. Includes analysis of the literature and context of the postmodern period (1945 to the present) with a focus on social and historical influences including technology, mass communication, globalization, politics, protest, and war. Also includes exploration of conventional genres and newer emerging forms, such as metafiction, magic realism, language poetry, and hypertext.

*Prerequisite(s): WRT 102 or 108.*

*Offered: May not be offered this year, check class schedule.*

**LIT 265 Major American Writers**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**LIT 267 World Literature: Narrative**

3 cr. hrs. 3 periods (3 lec.)

Multicultural readings of great narrative works of western literary tradition. Includes an introduction to narrative literature and works from major periods, such as ancient, classical, renaissance, and romantic, up to and including present. Also includes comparisons of form and theme to works from diverse cultural traditions, and an emphasis on verbal and written analysis of cultural and historical significance.

*Prerequisite(s): WRT 102 or 108.*

*Offered: May not be offered this year, check class schedule.*

**LIT 280 Introduction to Literature**

3 cr. hrs. 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.*

*Offered: Fall.*

**LIT 289 Literature and Film**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**LIT 289HC Literature and Film: Honors**

3 cr. hrs. 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 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; high quality peer reviewed paper or project in format appropriate for discipline: presentation of research, in class or to a wider audience.

*Prerequisite(s): WRT 102 or WRT 108.*

*Information: Must qualify for Honors program. Faculty or Advisor approval is required before enrolling in this course.*

*Offered: Fall.*

## Logistics and Supply Chain Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### LGM 101 Principles of Logistics and Supply Chain Management

3 cr. hrs. 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.

Offered: Fall, Spring.

### LGM 102 Inventory Control

3 cr. hrs. 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.

Offered: Spring.

### LGM 103 Contracts and Freight Claims

3 cr. hrs. 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.

Offered: Spring.

### LGM 104 Computerized Logistics

3 cr. hrs. 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.

Offered: Spring.

### LGM 105 Warehouse Management

3 cr. hrs. 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.

Offered: Fall.

### LGM 106 Transportation and Traffic Management

3 cr. hrs. 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.

Offered: Fall.

### LGM 107 Introduction to Purchasing

3 cr. hrs. 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.

Offered: Fall.

### LGM 108 International Logistics

3 cr. hrs. 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.

Offered: Spring.

**LGM 109 Readiness Skills for Logistics Careers**

1 cr. hrs. 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.

Offered: Spring.

**LGM 190 Logistics and Supply Chain Internship**

3 cr. hrs. 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.*

*Information: Students must complete 125 hours at a program-approved employer worksite.*

Offered: Fall, Spring, Summer.

**LGM 196 Independent Study in Logistics and Supply Chain Management**

3 cr. hrs. 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 LGM 105, 106, or 107.*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring, Summer.

## Machine Tool Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**MAC 100 Introduction to Machine Tool**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MAC 110 Manual Machine Shop**

4 cr. hrs. 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: Prerequisite may be waived with a score of 80% or better on the Machine Tool assessment test. See a machine tool instructor or advisor for prerequisite information.*

Offered: Fall, Spring.

**MAC 120 Machine Shop II**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of MAC 110. Includes a more in depth application of safety, lathes, milling machines, and grinding machines.

*Prerequisite(s): MAC 110 or equivalent with department advisor approval.*

Offered: May not be offered this year, check class schedule.

**MAC 125 Mechanical Inspection**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Principles and applications of dimensional measurement. Includes line graduated measuring instruments, fixed gages, gauge blocks, comparative measurements, optical comparators and projectors, angle measurement, straightness, flatness, and perpendicularity measurement, and coordinated measuring machines.

*Prerequisite(s): GTM 105 and MAC 110.*

*Information: Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.*

Offered: Fall, Spring.



**MAC 130 Machine Setup and Fixture Making**

3 cr. hrs. 5 periods (1 lec., 4 lab)

Concepts, techniques, and skills in machine setup. Includes how to translate blueprints into fixture making; the application of machine setup; and the making of fixtures.

*Prerequisite(s):* MAC 110.

*Information:* Prerequisite may be waived with industry experience. See a machine tool faculty instructor for prerequisite information.

Offered: Fall, Spring.

**MAC 140 Introduction to Electrical Discharge Machining**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Application of electrical discharge machining (EDM) in industry today. Includes overview of EDM, EDM machines and processes, spark generation and dielectric fluids, electrodes, and surface finishes.

*Prerequisite(s):* MAC 110.

*Information:* Prerequisite may be waived with Industry experience. See a machine tool instructor for prerequisite information.

Offered: May not be offered this year, check class schedule.

**MAC 150 Computer Numerical Control (CNC) Mill Programming I**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Operations and procedures for automated machining systems. Includes Numerical Control (NC) and Computer Numerical Control (CNC) machining system, positioning and coordinate systems used in NC/CNC programming, part programming, diagnosis and correction of programming errors, and programming procedures.

*Prerequisite(s):* GTM 105 and MAC 110.

*Recommendation:* Completion of CAD 101 before enrolling in this course.

*Information:* Industry experience may be substituted for prerequisite requirements. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

**MAC 155 Computer Numerical Control (CNC) Mill Programming II**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of MAC 150. Includes review of Computer Numerical Control (CNC), mill programming, diagnosis and correction of programming errors, advanced programming techniques use in production and prototype machining, introduction to lathe programming, and introduction to sub-programming.

*Prerequisite(s):* MAC 150.

*Information:* Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

**MAC 160 Computer Numerical Control (CNC) Lathe Programming**

4 cr. hrs. 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:* Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

**MAC 245 Wire Electrical Discharge Machining and Programming**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Operations and procedures for EDM machining system. Includes wire EDM overview, EDM operating processes, EDM machine functions, EDM manual part programming, and EDM machining operations.

*Prerequisite(s):* MAC 140 and 150.

Offered: May not be offered this year, check class schedule.

**MAC 257 Computer-Aided Machining CAM I**

4 cr. hrs. 6 periods (2 lec., 4 lab)

Computer-Aided Machining (CAM) I Programming automated machine tools using Computer-Aided Manufacturing (Mastercam) software. Includes review of Computer Numerical Control (CNC) and Computer-Aided Drafting (CAD), introduction to a CAM environment, creating geometry, operating manager, and code generation.

*Prerequisite(s):* MAC 155.

*Information:* Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

**MAC 258 Computer-Aided Machining (CAM) II**

4 cr. hrs. 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.

Offered: Fall.

**MAC 259 Computer-Aided Machining (CAM) III: Solid Modeling**

4 cr. hrs. 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.

Offered: Spring.

**MAC 275 Applied Metallurgy**

4 cr. hrs. 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.

Offered: Fall, Spring.

**MAC 296 Machine Tool Independent Projects**

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation.

*Information:* May be taken sixteen times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Information:* Consent of instructor must be obtained before enrolling in this course.

Offered: May not be offered this year, check class schedule.

## Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**MGT 110 Human Relations in Business and Industry**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MGT 122 Supervision**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MGT 124 Small Business Management**

3 cr. hrs. 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.

Offered: Fall, Spring.

**MGT 130 Retail Analysis**

3 cr. hrs. 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.*

Offered: Spring.

**MGT 135 International Management**

3 cr. hrs. 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.

Offered: Fall, Spring.

**MGT 230 Dynamics of Leadership**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**MGT 270 Computer Applications for Managers**

3 cr. hrs. 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.*

Offered: Fall.

**MGT 276 Human Resources**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**MGT 280 Business Organization and Management**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

## Marketing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### MKT 100 Customer Service Skills

3 cr. hrs. 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.

Offered: Fall, Spring.

### MKT 105 Retail Math

3 cr. hrs. 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 089 through module 15 or required score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

### MKT 111 Principles of Marketing

3 cr. hrs. 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.

Offered: Fall, Spring.

### MKT 113 Salesmanship

3 cr. hrs. 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.

Offered: Spring.

### MKT 125 Advertising

3 cr. hrs. 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.

Offered: Fall.

### MKT 139 Retailing

3 cr. hrs. 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.

Offered: Fall.

### MKT 140 Fashion Merchandising

3 cr. hrs. 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.

Offered: Fall.

### MKT 196 Independent Study in Marketing and Business

.5-3 cr. hrs. 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.

*Information:* May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

**MKT 240 Fashion Merchandising Planning and Control**

4 cr. hrs. 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.

*Offered:* Spring.

**MKT 290 Apparel Merchandising Internship**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

## Mathematics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**MAT 082 Basic Mathematics**

3 cr. hrs. 3 periods (3 lec.)

Fundamentals and applications of arithmetic. Includes operations on whole numbers, fractions, decimal numbers, ratio and proportion, percent, and measurement.

*Offered:* May not be offered this year, check class schedule.

**MAT 086 Prealgebra**

3 cr. hrs. 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.

*Offered:* Summer.

**MAT 089A Foundational Studies in Mathematics**

3 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**MAT 089B Foundational Studies in Mathematics II**

3 cr. hrs. 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.

*Offered:* Fall, Spring.

**MAT 092 Elementary Algebra**

3 cr. hrs. 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: MAT 086 with a grade of C or better, completion of Mini-mod 22 in MAT 089A or 089B, or satisfactory score on the mathematics assessment test.

Offered: Fall, Spring, Summer.

**MAT 095 Pre-College Algebra**

5 cr. hrs. 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:* Access to a scanner required for Math classes taken online.

**MAT 097 Intermediate Algebra**

3 cr. hrs. 3 periods (3 lec.)

Basic algebraic functions. Includes lines in the plane, systems of linear equations, inequalities, absolute value, polynomials, rational expressions and equations, and radical expressions and equations. Also includes quadratic equations, literal equations, exponents and logarithms, functions, and optional topics.

*Prerequisite(s):* Within the last three years: C or better in MAT 092 or satisfactory score on the mathematics assessment exam.

*Information:* Access to a scanner required for Math classes taken online.

Offered: Fall, Spring, Summer.

**MAT 106 Elementary Data Analysis with Spreadsheets**

2 cr. hrs. 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: MAT 086 with a C or better or MAT 089A or 089B through Module 15 or required score on the mathematics assessment test.

Offered: Fall, Spring.

**MAT 108 Practical Geometry and Trigonometry**

2 cr. hrs. 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: MAT 086 with a C or better or MAT 089A or 089B through Module 15 or satisfactory score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

**MAT 142 Topics in College Mathematics**

3 cr. hrs. 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, 097, 122, 122Z, or 123 with a C or better or required score on the mathematics assessment exam.

Offered: Fall, Spring, Summer.

**MAT 145 Mathematics for Game Design**

4 cr. hrs. 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, 097, 122, 122Z or 123 with a C or better, or satisfactory score on the Mathematics assessment exam.

Offered: Summer.

**MAT 146 Mathematics for Elementary Teachers I**

3 cr. hrs. 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.

Offered: Fall, Spring, Spring.

**MAT 147 Mathematics for Elementary Teachers II**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MAT 151 College Algebra**

4 cr. hrs. 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, 097, 122, 122Z, or 123 with a C or better, 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.

Offered: Fall, Spring, Summer.

**MAT 167 Introductory Statistics**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MAT 172 Finite Mathematics**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MAT 188 Precalculus I**

4 cr. hrs. 4 periods (4 lec.)

College-level algebra. Includes equations, algebraic and transcendental functions, inequalities, systems of equations, and calculator use. Also includes intensive preparation for analytic geometry and calculus.

*Prerequisite(s):* Within the last three years: MAT 097 with a C or better, or required score on the Mathematics assessment test.

*Recommendation:* This course is intended 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.

Offered: Fall, Spring, Summer.

**MAT 189 Precalculus II**

3 cr. hrs. 3 periods (3 lec.)

College-level trigonometry. Includes trigonometric functions, vectors, conic sections, sequences and series, and calculator use. Also includes intensive preparation for analytic geometry and calculus.

*Prerequisite(s):* Within the last three years: MAT 188 with a C or better, or satisfactory score on the mathematics assessment test.

*Recommendation:* This course is intended for students who plan to continue with Calculus.

*Information:* Credit for only one course will be awarded to students 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 for this course and will be used extensively.

Offered: Fall, Spring, Summer.

**MAT 212 Topics in Calculus**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**MAT 220 Calculus I**

5 cr. hrs. 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 Summer 2012 and Summer 2015 and MAT 182 between Fall 2012 and Fall 2015 will have met the prerequisite for MAT 220.

Offered: Fall, Spring, Summer.

**MAT 220HC Calculus I: Honors**

5 cr. hrs. 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 Summer 2012 and Summer 2015 and MAT 182 between Fall 2012 and Fall 2015 will have met the prerequisite for MAT 220.

*Information:* 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.

Offered: May not be offered this year, check class schedule.

**MAT 227 Discrete Mathematics in Computer Science**

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**MAT 231 Calculus II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of MAT 220. Includes techniques and applications of integration, numerical integration, improper integrals, separable integrals, separable differential equations, sequences, infinite series, and other related topics.

*Prerequisite(s):* Within the last three years: MAT 220 with a C or better.

Offered: Fall, Spring, Summer.



**MAT 231HC Calculus II: Honors**

4 cr. hrs. 4 periods (4 lec.)

Continuation of MAT 220. Includes techniques and applications of integration, numerical integration, improper integrals, separable differential equations, sequences, infinite series, 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. 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.

*Offered:* May not be offered this year, check class schedule.

**MAT 241 Calculus III**

4 cr. hrs. 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 C or better.

*Offered:* Fall, Spring, Summer.

**MAT 252 Introduction to Linear Algebra**

3 cr. hrs. 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.

*Offered:* Spring.

**MAT 262 Differential Equations**

3 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**MAT 296 Independent Studies in Mathematics**

1-4 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

## Medical Assistant

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**MDA 120 Medical Assistant Profession**

2 cr. hrs. 2 periods (2 lec.)

Overview of current health care professions, including labor market information, health care delivery systems, and health care payment sources. Includes health organization structure, patient rights and quality care, ethics and behaviors in the workplace, legal issues in health care, and personal responsibility for health and safety. Also includes basic communication skills, teamwork facilitation, student success skills, and college resources for students.

*Offered:* Contact department at 206-5100.

**MDA 121 Medical Assistant Skills for Success**

2 cr. hrs. 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.

*Offered:* Contact department at 206-5100.

**MDA 122 Medical Assistant Clinical Care**

2 cr. hrs. 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.

Offered: Contact department at 206-5100.

**MDA 123 Medical Assistant Clinical Procedures**

3 cr. hrs. 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.

Offered: Contact department at 206-5100.

**MDA 124 Medical Terminology for Health Care Workers**

2 cr. hrs. 2 periods (2 lec.)

Medical terminology used in health care, including descriptors of special care populations and specialty services. Encompasses a body systems approach to terms as they relate to structures, functions, diseases, procedures, and diagnostic tests. Also encompasses medical abbreviations and symbols, spelling, and building and analyzing terms using word parts.

Offered: Contact department at 206-5100.

**MDA 125 Orientation to ICD-9 Coding**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Orientation to the International Classification of Diseases - 9th Edition (ICD-9) coding classification system. Includes terminology, principles and components of the ICD-9 system, codes for diseases and conditions, coding from health records, and coding for the highest specificity.

*Recommendation: Completion of MDA 121 and 124 before enrolling in this course. Also a minimum of 25 words per minute word processing skills.*

Offered: Contact department at 206-5100.

**MDA 126 Medical Billing and Insurance for Medical Assistants**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Application of insurance, billing, and coding in the medical profession. Includes federal, state and private insurance claims; procedural and diagnostic coding; and banking and accounting principles. Also includes legal and ethical issues.

*Recommendation: Minimum of 25 words per minute word processing skills.*

Offered: Contact department at 206-5100.

**MDA 127 Administrative Procedures for Medical Assistants**

3 cr. hrs. 5 periods (2 lec., 3 lab)

Principles and procedures for front office administration. Includes telephone policy and customer service, correspondence and mail processing, appointment scheduling, medical records management and data collection. Also includes an overview of the medical assistant as office manager.

Offered: Contact department at 206-5100.

**MDA 190A Medical Assistant Front Office Externship**

1 cr. hrs. 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.*

Offered: Contact department at 206-5100.

**MDA 190B Medical Assistant Back Office Externship**

1 cr. hrs. 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.*

Offered: Contact department at 206-5100.

## Medical Laboratory Technician

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### MLT 101 Phlebotomy for Medical Laboratory Technology

3 cr. hrs. 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 201IN or 202IN.

*Information:* Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Spring.

### MLT 199 Introductory Co-op: Phlebotomy Lab Assisting

1 cr. hrs. 1 periods (1 lec.)

Principles of job success. Includes laboratory workplace skills, communication skills, time and energy management, managing stress, career information, preparing for employment; principles, theories, and practices in the career field; and problems in the work situation.

*Prerequisite(s):* MLT 101.

*Corequisite(s):* MLT 199WK

*Information:* Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

### MLT 199WK Introductory Co-op Work: Phlebotomy Lab Assisting

1.25 cr. hrs. 6.25 periods (6.25 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 101.

*Corequisite(s):* MLT 199

*Information:* Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

### MLT 200 Urinalysis/Body Fluids

3 cr. hrs. 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.

Offered: Fall.

### MLT 211 Hematology

5 cr. hrs. 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.

Offered: Spring.

### MLT 221 Clinical Chemistry

4 cr. hrs. 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.

Offered: Spring.

**MLT 231 Immunohematology/Immunology**

5 cr. hrs. 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.*

Offered: Fall.

**MLT 251 Clinical Microbiology**

5 cr. hrs. 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.*

Offered: Fall.

**MLT 260 Parasitology and Immunology/Serology**

3 cr. hrs. 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 seriological testing.

*Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.*

Offered: Spring.

**MLT 299 Advanced Co-op: Medical Laboratory Technician**

1 cr. hrs. 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 101, 199/199WK, 200, 211, 221, 231, 251 and 260.*

*Corequisite(s): MLT 299WK*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring, Summer.

**MLT 299WK Advanced Co-op Work: Medical Laboratory Technician**

8 cr. hrs. 40 periods (40 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 101, 199/199WK, 200, 211, 221, 231, 251 and 260.*

*Corequisite(s): MLT 299*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: Fall, Spring, Summer.

## Mexican-American Studies

For courses numbered 098, 198, 298, see "Topic Courses" a` bSYW\$\*#

### MAS 201 La Chicana

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Music

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### MUS 100 Guitar I

2 cr. hrs. 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.

*Offered: Fall, Spring.*

### MUS 101 Guitar II

2 cr. hrs. 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.*

*Offered: Fall, Spring.*

### MUS 102 Music Fundamentals

3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

### MUS 103 Music Theory Review

1 cr. hrs. 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 three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall, Spring.*

### MUS 105 Introduction to Piano (Non Major)

2 cr. hrs. 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.*

*Offered: Fall, Spring.*

**MUS 106 Introduction to Ear Training**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUS 108 Pima Jazz Band**

2 cr. hrs. 3 periods (1 lec., 2 lab)

Rehearsal and performance of many styles of music in the jazz idiom. Includes progressive development of musical skills through interpretation of literature.

*Information: Students chosen by audition.*

*Information: May be taken ten times for a maximum of twenty credit hours, but a maximum of three credits will apply toward the AGEC. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**MUS 111 Exploring Music through Piano**

3 cr. hrs. 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.

Offered: Fall, Spring.

**MUS 116 Pima Community College Orchestra**

2 cr. hrs. 3 periods (1 lec., 2 lab)

Progressive development of musical skills through interpretation of orchestra literature. Includes participation in regular rehearsals and performances.

*Information: Students chosen by audition.*

*Information: May be taken ten times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**MUS 120 Concert Band**

3 cr. hrs. 7 periods (1 lec., 6 lab)

Progressive development of musical skills through interpretation of literature. Includes participation in regular rehearsals and performances.

*Information: Students chosen by audition.*

*Information: May be taken ten times for a maximum of thirty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**MUS 125 Structure of Music I**

3 cr. hrs. 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. Music majors must also concurrently enroll in the appropriate level of studio instruction course. Consult a full time music faculty member for additional information.*

Offered: Fall, Spring.

**MUS 126 Structure of Music II**

3 cr. hrs. 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*

Offered: Spring.

**MUS 127 Aural Perception I**

2 cr. hrs. 2 periods (2 lec.)

Development of aural skills. Includes rhythmic dictation, intervallic recognition, sight singing, and clapping and counting of rhythms..

*Corequisite(s): MUS 125*

Offered: Fall, Spring.

**MUS 129 Aural Perception II**

2 cr. hrs. 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*

Offered: Spring.

**MUS 130 Chorale (SATB)**

3 cr. hrs. 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 ten times for a maximum of thirty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**MUS 131 College Singers (SATB)**

3 cr. hrs. 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.*

*Information: May be taken ten times for a maximum of thirty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**MUS 136 Voice Class I**

2 cr. hrs. 2 periods (2 lec.)

Practical training in basic skills and singing without specialization. Includes techniques, group singing, individual practice, and individual performance.

Offered: Fall, Spring.

**MUS 141 Piano Class I (Majors)**

2 cr. hrs. 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.

Offered: Fall, Spring.

**MUS 142 Piano Class II (Majors)**

2 cr. hrs. 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.*

Offered: Spring.

**MUS 143 Piano Class III (Majors)**

2 cr. hrs. 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.*

Offered: Fall.

**MUS 144 Piano Class IV (Majors)**

2 cr. hrs. 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.*

*Offered: Spring.*

**MUS 148 Musical Theater Workshop**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Students chosen by audition.*

*Offered: May not be offered this year, check class schedule.*

**MUS 149 Opera Workshop**

2 cr. hrs. 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 four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Students chosen by audition.*

*Offered: Fall.*

**MUS 151 Exploring Music**

3 cr. hrs. 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.

*Offered: Fall, Spring, Summer.*

**MUS 154 Jazz Improvisation**

2 cr. hrs. 2 periods (2 lec.)

Study of jazz improvisation on various instruments. Includes rhythmic, melodic, and harmonic aspects of jazz styles. Also includes an emphasis on progressive development of musical skills through interpretation of literature.

*Information: Students chosen by audition.*

*Information: May be taken ten times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**MUS 155 Introduction to Electronic Music I**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to producing music with Musical Instrument Digital Interface (MIDI) configurations and WAV sounds. Includes concepts in acoustics and music synthesis, use of hardware and software, music notation software, music sequencing software, and documentation of projects. Also includes computers, printers, and keyboard controller.

*Recommendation: Ability to read music before enrolling in this course.*

*Offered: Fall, Spring.*

**MUS 156 Introduction to Electronic Music II**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of MUS 155. Includes song data entry from computer synthesizer keyboards, editor/library, and percussion writing.

*Prerequisite(s): MUS 155.*

*Offered: Spring.*

**MUS 157 Music Industry I: Marketing, Merchandising and the Law**

3 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*



**MUS 158 Music Industry II: Music in Recording and Mass Media**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**MUS 160 Popular Music in America**

3 cr. hrs. 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.

*Offered:* Fall, Spring, Summer.

**MUS 201 History and Literature of Music I**

3 cr. hrs. 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.

*Offered:* Fall.

**MUS 202 History and Literature of Music II**

3 cr. hrs. 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.

*Offered:* Spring.

**MUS 223 Structure of Music III**

3 cr. hrs. 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.

*Corequisite(s):* MUS 224

*Offered:* Fall.

**MUS 224 Aural Perception III**

2 cr. hrs. 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.

*Corequisite(s):* MUS 223

*Offered:* Fall.

**MUS 226 Structure of Music IV**

3 cr. hrs. 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

*Offered:* Spring.

**MUS 228 Aural Perception IV**

2 cr. hrs. 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

*Offered:* Spring.

**MUS 257 Music Recording and Production**

3 cr. hrs. 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.

Offered: Fall, Spring.

## Music Studio Instruction

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**MUP 061 Studio Instruction: Brass (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*Information: Audition as a music major. 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.*

Offered: Fall, Spring.

**MUP 062 Studio Instruction: Guitar (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills to be stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*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.*

Offered: Fall, Spring.

**MUP 063 Studio Instruction: Percussion (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*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.*

Offered: Fall, Spring.

**MUP 064 Studio Instruction: Piano (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*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.*

Offered: Fall, Spring.

**MUP 065 Studio Instruction: Strings (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*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.*

Offered: Fall, Spring.

**MUP 066 Studio Instruction: Voice (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*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.*

Offered: Fall, Spring.

**MUP 067 Studio Instruction: Woodwinds (Pre Major)**

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

*Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).*

*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.*

Offered: Fall, Spring.

**MUP 161 Studio Instruction: Brass I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 162 Studio Instruction: Guitar I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 163 Studio Instruction: Percussion I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 164 Studio Instruction: Piano I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 165 Studio Instruction: Strings I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 166 Studio Instruction: Voice I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 167 Studio Instruction: Woodwinds I (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 168 Studio Instruction I: (Major)**

2 cr. hrs. 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.*

Offered: Fall, Spring.

**MUP 171 Studio Instruction: Brass II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 172 Studio Instruction: Guitar II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 173 Studio Instruction: Percussion II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 174 Studio Instruction: Piano II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 175 Studio Instruction: Strings II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 176 Studio Instruction: Voice II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 177 Studio Instruction: Woodwinds II (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 178 Studio Instruction II: (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 261 Studio Instruction: Brass III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 262 Studio Instruction: Guitar III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 263 Studio Instruction: Percussion III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 264 Studio Instruction: Piano III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 265 Studio Instruction: Strings III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 266 Studio Instruction: Voice III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 267 Studio Instruction: Woodwinds III (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 268 Studio Instruction III: (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 271 Studio Instruction: Brass IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 272 Studio Instruction: Guitar IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 273 Studio Instruction: Percussion IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 274 Studio Instruction: Piano IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 275 Studio Instruction: Strings IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 276 Studio Instruction: Voice IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 277 Studio Instruction: Woodwinds IV (Major)**

2 cr. hrs. 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*

Offered: Fall, Spring.

**MUP 278 Studio Instruction IV: (Major)**

2 cr. hrs. 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*

Offered: Fall.

## Nursing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**NRS 104 Nursing Process I**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**NRS 104LC Nursing Process I Clinical Lab**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**NRS 104LS Nursing Process I Skills Lab**

1 cr. hrs. 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.*

*Offered: Fall, Spring.*

**NRS 105 Nursing Process II**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**NRS 105LC Nursing Process II Clinical Lab**

4 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of NRS 105.

*Prerequisites(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.*

*Offered: Fall, Spring.*

**NRS 105LS Nursing Process II Skills Lab**

1 cr. hrs. 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.*

*Offered: Fall, Spring.*

**NRS 108 Drug Calculations**

1 cr. hrs. 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.*

*Offered: Fall, Spring.*



**NRS 155 Introduction to Pharmacology**

3 cr. hrs. 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): HCA 102, 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.*

*Offered: Fall, Spring.*

**NRS 188 Transition to Associate Degree Nursing**

4 cr. hrs. 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) or concurrent enrollment: BIO 205IN, ECE 107 or PSY 240.*

*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.*

*Offered: Fall, Spring.*

**NRS 188LS Transition to Associate Degree Nursing Skills Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Skills Lab portion of NRS 188.

*Prerequisite(s) or concurrent enrollment: BIO 205IN, ECE 107 or PSY 240.*

*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.*

*Offered: Fall, Spring.*

**NRS 196 Independent Study in Nursing**

1-9 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**NRS 201 Nursing Process III**

5 cr. hrs. 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.*

*Offered: Fall, Spring.*

**NRS 201LC Nursing Process III Clinical Lab**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**NRS 202 Nursing Process IV**

3 cr. hrs. 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, 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.*

*Offered: Fall, Spring.*

**NRS 202CA Nursing Process IV Clinical Lab - A**

3.5 cr. hrs. 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, 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.*

*Offered: Fall, Spring.*

**NRS 202CB Nursing Process IV Clinical Lab - B**

2.5 cr. hrs. 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, 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.*

*Offered: Fall, Spring.*

**NRS 203 Trends and Issues in Nursing**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Nursing Assistant

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### NRA 101 Nursing Assistant

2 cr. hrs. 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 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.

Offered: Fall, Spring.

### NRA 101LC Nursing Assistant Clinical

1 cr. hrs. 3 periods (3 lab)

Clinical Lab for NRA 101.

*Prerequisite(s):* Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 101, NRA 101LS

Offered: Fall, Spring.

### NRA 101LS Nursing Assistant Skills

1 cr. hrs. 3 periods (3 lab)

Skills Lab for NRA 101.

*Prerequisite(s):* Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

*Corequisite(s):* NRA 101, NRA 101LC

Offered: Fall, Spring.

### NRA 102 Patient Care Technician

1 cr. hrs. 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 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.

Offered: Fall, Spring.

### NRA 102LC Patient Care Tech Clinical

.67 cr. hrs. 2 periods (2 lab)

Clinical Lab for NRA 102.

*Prerequisite(s):* Within the last two years: REA 091 with 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.

Offered: Fall, Spring.

### NRA 102LS Patient Care Tech Skills

.33 cr. hrs. 1 periods (1 lab)

Skills lab for NRA 102.

*Prerequisite(s):* Within the last two years: REA 091 with 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.

Offered: Fall, Spring.

## Office and Administrative Professions

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### OAP 111 Computer Keyboarding for Office Technology

1 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

### OAP 123 Professional Development for Administrative Support

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

### OAP 132 Records Management: Filing Systems

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

### OAP 171 Office Procedures

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

### OAP 199 Co-op: Office and Administrative Professions

1 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

### OAP 199WK Co-op Work: Office and Administrative Professions

1-8 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* May not be offered this year, check class schedule.

## Optical Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### OPS 201 Geometrical and Instrumental Optics I

3 cr. hrs. 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, and PHY 210/210LB.

*Corequisite(s):* OPS 201LB

*Offered:* May not be offered this year, check class schedule.

### OPS 201LB Geometrical and Instrumental Optics I Laboratory

1 cr. hrs. 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, and PHY 210/210LB.

*Corequisite(s):* OPS 201

*Offered:* May not be offered this year, check class schedule.

### OPS 202 Geometrical and Instrumental Optics II

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

### OPS 202LB Geometrical and Instrumental Optics II Laboratory

1 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

## Paralegal

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### PAR 101 Introduction to Paralegal Careers

3 cr. hrs. 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.

*Offered:* Fall, Spring.

### PAR 102 Civil Litigation Procedures I

3 cr. hrs. 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, WRT 101 or concurrent enrollment.

*Offered:* Fall, Spring.

**PAR 103 Legal Research**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PAR 104 Paralegal Ethics**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PAR 106 Civil and Criminal Evidence**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PAR 202 Civil Litigation Procedures II**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PAR 203 Tort Law Procedures**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PAR 204 Wills, Trusts, and Estates**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PAR 206 Criminal Law and Procedures I**

3 cr. hrs. 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.*

*Offered: Fall.*

**PAR 207 Criminal Law and Procedures II**

3 cr. hrs. 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.*

*Offered: Spring.*

**PAR 208 Domestic Relations and Family Law**

3 cr. hrs. 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.*

*Offered: Spring.*

**PAR 209 Bankruptcy Procedures**

3 cr. hrs. 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.*

*Offered: Fall.*

**PAR 211 Legal Writing**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**PAR 212 Law Office Computerization**

3 cr. hrs. 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.*

*Offered: Spring.*

**PAR 213 Computer-Assisted Legal Research**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**PAR 215 Corporate Law Procedures**

3 cr. hrs. 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.*

*Offered: Spring.*

**PAR 217 Real Estate Legal Procedures**

3 cr. hrs. 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.*

*Offered: Fall.*

**PAR 218 Administrative Law: Employment**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**PAR 219 Administrative Law: Immigration**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**PAR 220 Administrative Law: Social Security**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**PAR 290 Paralegal Internship**

4 cr. hrs. 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.*

*Information: Designed for students in their final semester of course work in the Paralegal Program.*

*Information: 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.*

*Information: Application and acceptance required.*

*Offered: Fall, Spring.*



## Pharmacy Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### PHT 170 Introduction to Pharmacy Technology

2 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### PHT 171IN Pharmaceutical Calculations

4 cr. hrs. 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.

Offered: Fall, Spring.

### PHT 172 Drug Therapy I

4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### PHT 174IN Pharmacy Operations

3 cr. hrs. 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.

Offered: Fall, Spring.

### PHT 178IN Computer Applications for Pharmacy

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**PHT 180IN Sterile Products**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**PHT 181 Interprofessional Relations in Pharmacy**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**PHT 182 Drug Therapy II**

4 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**PHT 187 Pharmacy Law and Ethics**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**PHT 190LB Pharmacy Technician Internship**

4 cr. hrs. 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, 174IN, 178IN, 180IN, 181, 182 and 187.*

*Information: Consent of program coordinator is required before enrolling in this course.*

Offered: Fall, Spring, Summer.

**PHT 197 Clinical Seminar**

2 cr. hrs. 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, 174IN, 178IN, 180IN, 181, 182 and 187.*

*Information: Consent of program coordinator is required before enrolling in this course.*

Offered: Fall, Spring, Summer.

## Philosophy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### PHI 101 Introduction to Philosophy

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

### PHI 120 Introduction to Logic

3 cr. hrs. 3 periods (3 lec.)

Introduction to the main types of logical reasoning. Includes the nature of language, deductive logic, and inductive logic.

Offered: Fall, Spring, Summer.

### PHI 122 God, Mind, and Matter

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### PHI 123 Philosophical Foundations of Science

3 cr. hrs. 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.

Offered: Spring.

### PHI 130 Introductory Studies in Ethics and Social Philosophy

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### PHI 140 Philosophy of Religion

3 cr. hrs. 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.

Offered: Fall, Spring.

## Phlebotomy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### PHB 160 Foundations of Phlebotomy

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**PHB 162 Safety Standards in Phlebotomy**

3 cr. hrs. 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*

*Offered: Fall, Spring, Summer.*

**PHB 164 Professional Practices in Phlebotomy**

3 cr. hrs. 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*

*Offered: Fall, Spring, Summer.*

**PHB 166LB Phlebotomy Laboratory Practice**

2 cr. hrs. 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*

*Offered: Fall, Spring, Summer.*

**PHB 190LC Clinical Internship in Phlebotomy**

1-3 cr. hrs. 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.*

*Offered: Fall, Spring, Summer.*

## Physics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**PHY 121 Introductory Physics I**

4 cr. hrs. 4 periods (4 lec.)

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, linear momentum, rotational motion, heat, states of matter, and waves and sound.

*Prerequisite(s): Placement into College Algebra (MAT 151) or higher.*

*Corequisite(s): PHY 121LB*

*Offered: Fall, Spring.*

**PHY 121IN Introductory Physics I**

5 cr. hrs. 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, linear momentum, 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.*

*Offered: Fall, Spring, Summer.*

**PHY 121LB Introductory Physics I Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 121.

*Prerequisite(s):* Placement into College Algebra (MAT 151) or higher.

*Corequisite(s):* PHY 121

*Offered:* May not be offered this year, check class schedule.

**PHY 122 Introductory Physics II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of PHY 121/121LB or 121IN. Includes light, electricity, magnetism and electromagnetism, relativity, atomic physics, quantum physics, wave mechanics, and nuclear physics.

*Prerequisite(s):* PHY 121/121LB or 121IN.

*Corequisite(s):* PHY 122LB

*Offered:* May not be offered this year, check class schedule.

**PHY 122IN Introductory Physics II**

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of PHY 121/121LB or 121IN. Includes light, electricity, magnetism and electromagnetism, relativity, atomic physics, quantum physics, wave mechanics, and nuclear physics.

*Prerequisite(s):* PHY 121/121LB or 121IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

*Offered:* Fall, Spring, Summer.

**PHY 122LB Introductory Physics II Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 122.

*Prerequisite(s):* PHY 121/121LB or 121IN.

*Corequisite(s):* PHY 122

*Offered:* May not be offered this year, check class schedule.

**PHY 195 Introduction to Research in Physics**

4 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**PHY 196 Independent Studies in Physics**

1-4 cr. hrs. 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.

*Information:* May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**PHY 210 Introductory Mechanics**

4 cr. hrs. 4 periods (4 lec.)

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):* MAT 220.

*Corequisite(s):* PHY 210LB

*Information:* High school physics is required before enrolling in this course.

*Offered:* May not be offered this year, check class schedule.

**PHY 210IN Introductory Mechanics**

5 cr. hrs. 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):* MAT 220.

*Information:* High school physics is required before enrolling in this course.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

*Offered:* Fall, Spring, Summer.

**PHY 210LB Introductory Mechanics Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 210.

*Corequisite(s):* PHY 210

*Information:* High school physics is required before enrolling in this course.

*Offered:* May not be offered this year, check class schedule.

**PHY 216 Introductory Electricity and Magnetism**

4 cr. hrs. 4 periods (4 lec.)

Calculus-based introduction to electricity and magnetism for physics, mathematics, and engineering majors. Includes electric charge and Coulomb's law, the electric field, Gauss' 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):* MAT 231 and PHY 210/210LB or 210IN.

*Corequisite(s):* PHY 216LB

*Offered:* May not be offered this year, check class schedule.

**PHY 216IN Introductory Electricity and Magnetism**

5 cr. hrs. 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):* MAT 231, and PHY 210/210LB or 210IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

*Offered:* Fall, Spring.

**PHY 216LB Introductory Electricity and Magnetism Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 216.

*Prerequisite(s):* MAT 231 and PHY 210/210LB or 210IN.

*Corequisite(s):* PHY 216

*Offered:* May not be offered this year, check class schedule.

**PHY 221 Introduction to Waves and Heat**

3 cr. hrs. 3 periods (3 lec.)

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):* MAT 231 and PHY 210/210LB or 210IN.

*Corequisite(s):* PHY 221LB

*Offered:* May not be offered this year, check class schedule.

**PHY 221IN Introduction to Waves and Heat**

4 cr. hrs. 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):* MAT 231 and PHY 210/210LB or 210IN.

*Information:* IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

**PHY 221LB Introduction to Waves and Heat Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 221.

*Prerequisite(s):* MAT 231 and PHY 210/210LB or 210IN.

*Corequisite(s):* PHY 221

Offered: May not be offered this year, check class schedule.

**PHY 295LB Independent Research in Physics**

1-4 cr. hrs. 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.

*Information:* May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

## Political Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**POS 100 Introduction to Politics**

3 cr. hrs. 3 periods (3 lec.)

Issues, principles, and trends in political science. Includes politics and political science, political philosophy and ideology, comparative politics, American national and state and local government, and international relations.

Offered: Fall, Spring.

**POS 196 Independent Study in Political Science**

2-4 cr. hrs. 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.

*Information:* May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

**POS 201 American National Government and Politics**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**POS 202 Introduction to International Relations**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**POS 203 Introduction to Political Ideas**

3 cr. hrs. 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.

Offered: Fall.

**POS 204 Introduction to Comparative Politics**

3 cr. hrs. 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.

Offered: Spring.

**POS 210 National and State Constitutions**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**POS 231 American State and Local Governments and Politics**

3 cr. hrs. 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.*

Offered: Spring.

**POS 232 The Politics and History of Immigration**

3 cr. hrs. 3 periods (3 lec.)

Examines the politics of immigration in the United States and the phenomenon of emigration in a global context. Includes analyses of the history of immigration as a result of the country's political economy and its evolution and the role of immigration in the socio-political and economic development of the nation.

*Information: Same as HIS 232.*

Offered: May not be offered this year, check class schedule.

**POS 240 Understanding Terrorism**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedull.

**POS 290 Political Science Internship**

3 cr. hrs. 15 periods (15 lab)

Supervised internship in a local governmental office. Includes placement with elected officials or candidates for public office, governmental agencies, and city, county or state departments. 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.*

Offered: Fall, Spring, Summer.



## Portuguese

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### POR 101 Elementary Portuguese I

4 cr. hrs. 4 periods (4 lec.)

Basic linguistic skills of the Portuguese language. Includes article, gender, numerals, present indicative, irregular plurals, idiomatic expression, commands, the preterite, and cultural traditions. Also includes proficiency in speaking, reading, writing, and understanding Portuguese.

Offered: May not be offered this year, check class schedule.

### POR 102 Elementary Portuguese II

4 cr. hrs. 4 periods (4 lec.)

Continuation of POR 101. Includes preterite indicative, imperfect indicative, simple past tenses of indicative, pronominal verbs, present participle in progressive constructions, subjunctive, and the use of the present, descriptive adjective, present perfect indicative, conditional verbs, present subjunctive, and cultural traditions. Also includes increased proficiency in listening, speaking, reading, and writing Portuguese.

*Prerequisite(s):* POR 101.

Offered: May not be offered this year, check class schedule.

## Professional Flight Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### PFT 101 Stage One: Ground School

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Psychology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### PSY 100 Psychology I

6 cr. hrs. 6 periods (6 lec.)

*Information:* PSY 100A and 100B together constitute PSY 100.

Offered: May not be offered this year, check class schedule. .

### PSY 100A Psychology I

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### PSY 100B Psychology II

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**PSY 101 Introduction to Psychology**

4 cr. hrs. 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):* REA 091 with a C or better (or assessment into REA 112).

*Information:* Content is a combination of elements of PSY 100A and 100B.

Offered: Fall, Spring, Summer.

**PSY 101HC Introduction to Psychology: Honors**

4 cr. hrs. 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.

*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.

Offered: Fall, Spring.

**PSY 132 Psychology and Culture**

3 cr. hrs. 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.

Offered: Fall, Spring.

**PSY 210 Introduction to Biopsychology**

3 cr. hrs. 3 periods (3 lec.)

Survey of the basic principles of the nervous system function. Includes research methods, theoretical perspectives, anatomy and functions of the nervous system, and brain function and behavior. Also includes such topics as the biological basis of sleep and rhythms, stress and health, aggression and violence, and mental disorders.

*Prerequisite(s):* PSY 100B or 101.

*Information:* Prerequisite(s) may be waived with consent of instructor before enrolling in the class.

Offered: May not be offered this year, check class schedule.

**PSY 214 Abnormal Psychology**

3 cr. hrs. 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.

Offered: Fall, Spring.

**PSY 215 Human Sexuality**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**PSY 216 Psychology of Gender**

3 cr. hrs. 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).*

Offered: Fall, Spring.

**PSY 218 Health Psychology**

3 cr. hrs. 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).*

Offered: Fall, Spring.

**PSY 220 The Psychology of Death and Loss**

3 cr. hrs. 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).*

Offered: Fall, Spring.

**PSY 224 Investigating Paranormal Psychology**

3 cr. hrs. 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).*

Offered: Fall.

**PSY 230 Psychological Measurements and Statistics**

3 cr. hrs. 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 122 or equivalent with a C or better.*

*Information: Prerequisite(s) may be waived with consent of instructor before enrolling in the class.*

Offered: Fall, Spring, Summer.

**PSY 240 Developmental Psychology**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**PSY 250 Introduction to Social Psychology**

3 cr. hrs. 3 periods (3 lec.)

Introduction to major theories and research findings of social psychology. Includes research focus and methods, social influence on individual behavior, effects of culture and gender on social behavior, self-perception and attitudes, and social perceptions and international relations.

*Prerequisite(s): PSY 100A or 101.*

*Information: Prerequisite(s) may be waived with consent of instructor before enrolling in this class.*

Offered: May not be offered this year, check class schedule.

**PSY 254 Psychology of Love and Compassion**

3 cr. hrs. 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).*

Offered: Spring.

**PSY 262 Positive Psychology**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**PSY 270 Meditation**

3 cr. hrs. 3 periods (3 lec.)

Theoretical principles and selected traditions of meditation self-awareness. Includes principles and techniques of meditation, meditation traditions, literature of meditation, meditation arts, and psychology and physiology of meditation.

Offered: May not be offered this year, check class schedule.

**PSY 289 Psychology Research Methods**

4 cr. hrs. 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.*

Offered: Fall, Spring.

## Radiologic Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**RAD 170 Medical Imaging Fundamentals**

2 cr. hrs. 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 faculty is required before enrolling in this course.*

Offered: Summer.

**RAD 170LB Medical Imaging Fundamentals Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of RAD 170.

*Corequisite(s): RAD 170*

Offered: Summer.

**RAD 171 Radiographic Positioning I**

3 cr. hrs. 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 170/170LB.

*Corequisite(s):* RAD 171LB, RAD 172, RAD 172LB, RAD 173LC

*Information:* Consent of program faculty is required before enrolling in this course.

Offered: Fall.

**RAD 171LB Radiographic Positioning I Lab**

1.5 cr. hrs. 4.5 periods (4.5 lab)

This is the lab portion of RAD 171.

*Corequisite(s):* RAD 171, RAD 172, RAD 172LB, RAD 173LC

Offered: Fall.

**RAD 172 Medical Imaging Technology I**

3 cr. hrs. 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 170/170LB.

*Corequisite(s):* RAD 171, RAD 171LB, RAD 172LB, RAD 173LC

*Information:* Consent of program faculty is required before enrolling in this course.

Offered: Fall.

**RAD 172LB Medical Imaging Technology I Lab**

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of RAD 172.

*Prerequisite(s):* RAD 170/170LB.

*Corequisite(s):* RAD 171, RAD 171LB, RAD 172, RAD 173LC

*Information:* Consent of program faculty is required before enrolling in this course.

Offered: Fall.

**RAD 173LC Clinical Education I**

6 cr. hrs. 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 170/170LB.

*Corequisite(s):* RAD 171, RAD 171LB, RAD 172, RAD 172LB

*Information:* Consent of program faculty is required before enrolling in this course.

*Information:* 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.

Offered: Fall.

**RAD 174 Radiographic Positioning II**

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 171. Includes routine and special positioning of the pelvis, hips, SI joints, bony 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 faculty is required before enrolling in this course.

Offered: Spring.

**RAD 174LB Radiographic Positioning II Lab**

1.5 cr. hrs. 4.5 periods (4.5 lab)

This is the lab portion of RAD 174.

*Corequisite(s):* RAD 174, RAD 175, RAD 175LB, RAD 176LC

*Offered:* Spring.

**RAD 175 Medical Imaging Technology II**

3 cr. hrs. 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 faculty is required before enrolling in this course.

*Offered:* Spring.

**RAD 175LB Medical Imaging Technology II Lab**

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of RAD 175.

*Prerequisite(s):* RAD 171/171LB, 172/172LB and 173LC.

*Corequisite(s):* RAD 174, RAD 174LB, RAD 175, RAD 176LC

*Information:* Consent of program faculty is required before enrolling in this course.

*Offered:* Spring.

**RAD 176LC Clinical Education II**

6 cr. hrs. 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:* Consent of program faculty is required before enrolling in this course.

*Information:* 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.

*Offered:* Spring.

**RAD 177LC Clinical Education III**

6 cr. hrs. 24 periods (24 lab)

Continuation of RAD 176LC. Includes routine and special radiographic procedures, mobile radiography, emergency department procedures, and observation and assisting in fluoroscopic procedures.

*Prerequisite(s):* RAD 174/174LB, 175/175LB and 176LC.

*Information:* Consent of program faculty is required before enrolling in this course.

*Information:* Competency-based assigned, 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.

*Offered:* Summer.

**RAD 181 Radiographic Positioning III**

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 174. Includes radiographic positioning and fluroscopic 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 181LB, RAD 182, RAD 183LC

*Information:* Consent of program coordinator is required before enrolling in this course.

*Offered:* Fall.

**RAD 181LB Radiographic Positioning III Lab**

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of RAD 181.

*Corequisite(s):* RAD 181, RAD 182, RAD 183LC

*Offered:* Fall.

**RAD 182 Medical Imaging Technology III**

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 175. Includes image intensification, digital fluoroscopy, special imaging procedures, principles of conventional film processing, other imaging modalities, and professional roles and behaviors.

*Prerequisite(s):* RAD 175/175LB, 177LC.

*Corequisite(s):* RAD 181, RAD 181LB, RAD 183LC

*Information:* Consent of program faculty is required before enrolling in this course.

*Offered:* Fall.

**RAD 183LC Clinical Education IV**

4 cr. hrs. 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 181, RAD 181LB, RAD 182

*Information:* Consent of program faculty is required before enrolling in this course.

*Information:* 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.

*Offered:* Fall.

**RAD 184 Radiographic Positioning IV**

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 181. Includes positioning for the cranial and facial bones, acute medical emergencies, review of vital signs, radiation biology, and infection control and preventing transmissible diseases.

*Prerequisite(s):* RAD 181/181LB, 182, 183LC.

*Corequisite(s):* RAD 184LB, RAD 185, RAD 186LC

*Information:* Consent of program faculty is required before enrolling in this course.

*Offered:* Spring.

**RAD 184LB Radiographic Positioning IV Lab**

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of RAD 184.

*Prerequisite(s):* RAD 181/181LB, 182, 183LC.

*Corequisite(s):* RAD 184, RAD 185, RAD 186LC

*Offered:* Spring.

**RAD 185 Clinical Seminar**

2.5 cr. hrs. 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 181/181LB, 182, 183LC.

*Corequisite(s):* RAD 184, RAD 184LB, RAD 186LC

*Information:* Consent of program faculty is required before enrolling in this course.

*Information:* 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.

*Offered:* Spring.

**RAD 186LC Clinical Education V**

6 cr. hrs. 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 181/181LB, 182, 183LC.

*Corequisite(s):* RAD 184, RAD 184LB, RAD 185

*Information:* Consent of program faculty is required before enrolling in this course.

*Information:* 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.

*Offered:* Spring.

## Reading

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**REA 071 Reading Fundamentals**

4 cr. hrs. 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.

*Offered:* Fall, Spring.

**REA 081 Reading Improvement I**

4 cr. hrs. 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.

*Information:* May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**REA 091 Reading Improvement II**

4 cr. hrs. 4 periods (4 lec.)

Development of reading strategies. Includes vocabulary comprehension, study strategies, metacognition, information literacy, and community of readers.

*Prerequisite(s):* With a C or better: ESL 088RV or REA 081, or required score on the Reading assessment. .

*Information:* May be taken two times for a maximum of 8 credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**REA 112 Critical Reading**

4 cr. hrs. 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):* 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.

*Offered:* Fall, Spring, Summer.



**REA 112HP Critical Reading for Health Professions**

4 cr. hrs. 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): 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.*

Offered: Fall, Spring.

## Religion

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**REL 119 Judaism, Christianity, and Islam**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the three major western religions. Includes nature of religious belief, development of Judaism, teaching of Judaism, festivals and rituals of Judaism, development of Christianity, teaching 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.

Offered: May not be offered this year, check class schedule.

**REL 130 Asian Religions**

3 cr. hrs. 3 periods (3 lec.)

Religions of India and the Far East. Includes Hinduism, Buddhism, and East Asian religions.

Offered: Fall.

**REL 140 Philosophy of Religion**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**REL 200 Religion in Popular Culture**

3 cr. hrs. 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.

Offered: Fall, Spring.

**REL 220 Old Testament**

3 cr. hrs. 3 periods (3 lec.)

Major books of the Old Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

Offered: Fall, Spring.

**REL 221 New Testament**

3 cr. hrs. 3 periods (3 lec.)

Major books of the New Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

Offered: Fall.

## Reserve Officer's Training Corps (ROTC) - Air Force

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### MLA 100 Foundations of Air Force I

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLA 101 Foundation of the Air Force II

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLA 110 Military Aerospace Physical Training Program

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLA 200 Evolution of USAF Air and Space Power I

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLA 201 Evolution USAF Air and Space Power II

2 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Reserve Officer's Training Corps (ROTC) - Army

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### MLS 100 Introduction to Military Skills I

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLS 101 Introduction to Military Skills II

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLS 102 Army Physical Training

1 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

### MLS 103 Ranger Challenge

1 cr. hrs. 2 periods (2 lab)

Introduction to the basic military skills needed to complete the ranger challenge. Includes individual fitness training, team building skills, self-discipline, and conditioning.

*Offered: May not be offered this year, check class schedule.*

### MLS 200 Army Leadership Dynamics I

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLS 201 Army Leadership Dynamics II

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### MLS 296 Independent Study in Military Science

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Reserve Officer's Training Corps (ROTC) - Navy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### NSP 100 Naval Laboratory I

1 cr. hrs. 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.*

*Information: May be taken four times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

### NSP 101 Introduction to Naval Science

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### NSP 102 Naval Ship Systems I

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### NSP 103 Naval Laboratory I (Marine Option)

2 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### NSP 110 Navy/Marine Physical Training

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### NSP 201 Naval Ship Systems II

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**NSP 202 Sea Power and Maritime Affairs**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Respiratory Therapy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**RTH 110 Introduction to Respiratory Care**

4 cr. hrs. 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.*

*Offered: Fall.*

**RTH 112 Respiratory Physiology**

4 cr. hrs. 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.*

*Offered: Fall.*

**RTH 121 Basic Therapeutics**

4 cr. hrs. 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.*

*Offered: Fall.*

**RTH 121LB Basic Therapeutics Lab**

1 cr. hrs. 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.*

*Offered: Fall.*

**RTH 123 Basic Assessment and Monitoring**

3 cr. hrs. 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.*

**Offered:** Spring.

**RTH 123LB Basic Assessment and Monitoring Lab**

1 cr. hrs. 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.*

**Offered:** Spring.

**RTH 124 Pharmacology for Respiratory Care**

3 cr. hrs. 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.*

**Offered:** Spring.

**RTH 125LC Clinical Procedures I**

1 cr. hrs. 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.*

**Offered:** Spring.

**RTH 135LC Clinical Procedures II**

3 cr. hrs. 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.*

**Offered:** Summer.

**RTH 162 Principles of Mechanical Ventilation**

3 cr. hrs. 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.

*Offered:* Spring.

**RTH 241 Critical Care Therapeutics**

4 cr. hrs. 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.

*Offered:* Fall.

**RTH 241LB Critical Care Therapeutics Lab**

1 cr. hrs. 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 content of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

*Offered:* Fall.

**RTH 243 Advanced Assessment and Monitoring**

4 cr. hrs. 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.

*Offered:* Fall.

**RTH 243LB Advanced Assessment and Monitoring Lab**

1 cr. hrs. 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.

*Offered:* Fall.

**RTH 245LC Clinical Procedures III**

4 cr. hrs. 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.*

Offered: Fall.

**RTH 246 Cardiorespiratory Disorders I**

3 cr. hrs. 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.*

Offered: Spring.

**RTH 251 Specialty Therapeutics**

4 cr. hrs. 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.*

Offered: Spring.

**RTH 251LB Specialty Therapeutics Lab**

1 cr. hrs. 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.*

Offered: Spring.

**RTH 255LC Clinical Procedures IV**

4 cr. hrs. 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.*

Offered: Spring.



**RTH 256 Cardiorespiratory Disorders II**

3 cr. hrs. 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.*

*Offered: Spring.*

**RTH 257LB Clinical Applications and Professional Development**

1 cr. hrs. 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.*

*Offered: Spring.*

**RTH 295 Independent Research in Respiratory Therapy**

.5-4 cr. hrs. 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.*

*Information: Consent of instructor is required before enrolling in this course.*

*Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Summer.*

## Russian

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**RUS 101 Elementary Russian I**

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Russian language. Includes Cyrillic alphabet, greetings, gender, readings, communications, and activities.

*Offered: May not be offered this year, check class schedule.*

**RUS 102 Elementary Russian II**

4 cr. hrs. 4 periods (4 lec.)

Continuation of RUS 101. Includes grammar and vocabulary, housing and furniture, family and professions, shopping, money and measurements, and biographies of people.

*Prerequisite(s): RUS 101.*

*Information: Prerequisite(s) may be waived with one year of high school Russian. See an instructor.*

*Offered: May not be offered this year, check class schedule.*

## Science Summer Career Academy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### SCA 100EP Career Choices in STEM: Physics and Engineering

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### SCA 100ST Career Choices in STEM: Science

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

## Science for Teachers

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### SCT 280 Process of Science for Elementary Educators I

3 cr. hrs. 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 142, and one of the following: AST 101IN, AST 102IN; CHM 121IN, CHM 130IN, CHM 151IN; GEO 101, GEO 102; GLG 102IN; PHY 121/121LB or 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.

Offered: Fall.

### SCT 281 Process of Science for Elementary Educators II

3 cr. hrs. 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.

Offered: Spring.

## Social Services

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### SSE 110 Introduction to Social Welfare

3 cr. hrs. 3 periods (3 lec.)

Introduction to the social welfare system. Includes historical context, approaches to service delivery, social welfare as an institution, development of the social work profession, practice methods, professional values and code of ethics, private and public funding sources, bureaucratic structures, community resources, and welfare myths and realities. Also includes social problems and special populations, cultural awareness and competency, use of technology, professional organizations, and public policy and future trends.

Offered: Fall, Spring, Summer.

**SSE 111 Group Work**

3 cr. hrs. 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.

Offered: Fall, Spring.

**SSE 121 Study of Substance Use Disorders**

3 cr. hrs. 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.

Offered: Fall, Spring.

**SSE 123 Prevention of Substance Use Disorders**

3 cr. hrs. 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, special populations, prevention in the workplace, and program evaluation.

Offered: Fall, Spring.

**SSE 128 Introduction to Behavioral Health**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**SSE 140 Domestic Violence: Causes and Cures**

3 cr. hrs. 3 periods (3 lec.)

Overview of historical and contemporary causes of domestic violence. Includes laws and law enforcement, society, 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.

Offered: Spring.

**SSE 146 Child Abuse Intervention and Protection**

3 cr. hrs. 3 periods (3 lec.)

Overview of the scope and nature of child abuse and neglect. Includes child abuse from historical and cultural perspectives, 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 management of child abuse cases.

Offered: Fall.

**SSE 154 Nutrition**

3 cr. hrs. 3 periods (3 lec.)

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet.

*Information: Same as FSN 154.*

Offered: Fall, Spring, Summer.

**SSE 160 Introduction to Youth Services**

3 cr. hrs. 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.

Offered: Fall.

**SSE 170 Community Health Advisor**

3 cr. hrs. 3 periods (3 lec.)

Preparation of Community Health Advisors for outreach disease prevention, advocacy, education, and referral services within prescribed communities. Includes national and local history of community health work programs, overview of the health services system, communication and relationship building skills, coping with stress, personal health, building self-esteem, and dealing with feelings. Also includes presentation skills, using support materials, interacting with other agencies within the community, managing home visits, dealing with challenging situations, professional issues, and empowering and mobilizing for action.

Offered: Fall.

**SSE 204 Counseling in a Multicultural Setting**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**SSE 205 Case Report Writing**

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles, concepts, techniques and necessary skills to create and maintain case report records. Includes case report writing, report content, ethical and legal issues, current trends in behavioral health case report writing, and cultural competence.

Offered: Fall, Spring.

**SSE 210 Community Organization and Development**

3 cr. hrs. 3 periods (3 lec.)

An examination, principles, and techniques of community organizing to effect change in America. Includes current conditions, theoretical frameworks, community change, overcoming resistance, professional practice and ethics, promoting neighborhood change, using information technology, planning for action, personal power, and people as a valuable resource. Also includes developing resources and funding, use of the media, community development, principles for effective leadership, strategies for institutional change, and government structure and legislative lobbying.

*Prerequisite(s): SSE 110.*

Offered: Fall, Spring.

**SSE 211 Group Technique Applications**

3 cr. hrs. 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.*

Offered: Fall, Spring.

**SSE 220 Treatment of the Substance Use Disorders**

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of treating substance use disorders. Includes treatment modalities, helping, treatment plans, case studies, withdrawal, and value clarification. Also includes role playing in treatment situations, causes of substance use disorders, and integration of treatment for substance use disorders and case management skills.

Offered: Fall, Spring.

**SSE 222 Political, Legal and Ethical Aspects of Substance Use**

3 cr. hrs. 3 periods (3 lec.)

Overview of substance use and the law. Includes historical and legal overview, major legislation and court decisions; substances and their effects, substance classification, and the concept of addiction; nature, uses, legal status, and social and economic aspects of the major psychoactive drugs. Also includes attitudes toward substance use and the connection between substance use, crime, and gangs; implications of decriminalization or legalization of substances, international drug trafficking and its effect on U.S. policy and programs, law enforcement, and ethics and ethical practice.

Offered: Fall, Spring.

**SSE 224 Substance Use Disorders Among Diverse and Special Needs Populations**

3 cr. hrs. 3 periods (3 lec.)

Examination 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.

Offered: Fall.

**SSE 242 Crisis Intervention, Theory and Techniques**

3 cr. hrs. 3 periods (3 lec.)

Principles and practice of crisis intervention. Includes crisis intervention theory, skills of crisis intervention, handling specific types of crises, large-scale community crises, crises worker issues and challenges, and community response to crises.

Offered: Spring.

**SSE 281 Social Service Delivery Systems**

3 cr. hrs. 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.*

*Information: Requires 40 hours of classroom-mediated community agency contact.*

Offered: Spring.

**SSE 285 Foundations of Social Work Practice**

3 cr. hrs. 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 281 or concurrent enrollment.*

Offered: Spring.

**SSE 290 Youth Services Field Experience**

4 cr. hrs. 16 periods (1 lec., 15 lab)

Supervised placement in community youth serving agencies. Includes completion of written assignments, regular supervision services with agency supervisors, assistance with resume writing, orientation to agencies in the community, and evaluation of student performance.

*Prerequisite(s): SSE 160 and 285.*

*Recommendation: Consult instructor for alternative prerequisites.*

*Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this course.*

*Information: Students complete 225 clock hours of direct service at a youth serving organization during the semester.*

Offered: Spring.

**SSE 292 Social Services Field Experience**

4 cr. hrs. 16 periods (1 lec., 15 lab)

Supervised placement in community social services agencies. Includes completion of written assignments, regular supervision service with agency supervisors, assistance with resume writing, orientation to agencies in the community, and evaluation of student performance.

*Prerequisite(s): SSE 285.*

*Recommendation: Consult instructor for alternative prerequisites.*

*Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this course.*

*Information: Students complete 225 clock hours of direct service at a social service organization during the semester.*

Offered: Spring.

**SSE 293 Community Health and Development Field Experience**

4 cr. hrs. 16 periods (1 lec., 15 lab)

Community health and development skills practiced and evaluated in community-based health, human service, education and community agencies and settings. Includes supervised placement in an appropriate social service agency or organization, supervisory services and site visits, orientation to community agencies and organizations, field experience evaluation, and classroom seminars.

*Prerequisite(s): SSE 170.*

*Information: Students complete 225 clock hours of direct service at a community health and development organization during the semester.*

Offered: Spring.

**SSE 296 Independent Study in Social Services**

1-3 cr. hrs. 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.*

*Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Sociology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**SOC 101 Introduction to Sociology**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**SOC 109 Introduction to Global Studies**

3 cr. hrs. 3 periods (3 lec.)

Survey of modern globalization. Includes the study of dimensions of globalization, global organizations, global politics, cultural globalization, the global economy, global environmental independence, and global social movements and counter movements. Also includes global interactions and their current effects on the restructuring of cultural, political, and economic institutions worldwide.

*Information: Same as ANT 109 and GLS 109.*

Offered: May not be offered this year, check class schedule.

**SOC 110 Introduction to Cities and Global Society**

3 cr. hrs. 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.

Offered: Fall.

**SOC 120 Current Social Problems**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**SOC 127 Marriage and the Family**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**SOC 130 Social World of Drugs**

3 cr. hrs. 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.*

Offered: Fall.

**SOC 140 Sociology of Religion**

3 cr. hrs. 3 periods (3 lec.)

Sociological analysis of religion as a social institutional arena. Includes functional versus substantive definitions of religion, methodological stance sociologists take toward religion as an object of study, classical and contemporary theoretical perspectives on religion, major faith traditions, secularization versus fundamentalism, globalization and religion, new religious movements, religion and key social statuses, and religious diversity and change in the U.S.

Offered: Spring.

**SOC 166 Social Gerontology**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**SOC 201 Race, Ethnicity, Minority Groups and Social Justice**

3 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**SOC 203 Sociology of Utopia**

3 cr. hrs. 3 periods (3 lec.)

Exploration of the idea of utopia and its influence on human societies throughout global history. Includes utopia and social structure, utopias before Christianity, Christian and humanist utopianism, utopian revivals and dystopias, and utopian thinking and social institutions.

Offered: May not be offered this year, check class schedule.

**SOC 204 Gender Identities, Interactions and Relations**

3 cr. hrs. 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.

Offered: Spring.

**SOC 215 Human Sexuality**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**SOC 296 Independent Study in Sociology**

3 cr. hrs. 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.*

*Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

## Solar Technologies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**SLR 101 Beginning Photovoltaic Installation**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**SLR 102 Advanced Photovoltaic Installation**

3 cr. hrs. 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.*

*Offered: Spring.*

**SLR 130 Solar Hot Water Systems**

4 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

## Spanish

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**SPA 085 Introductory Spanish**

4 cr. hrs. 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.*

*Offered: Fall.*



**SPA 101 Elementary Spanish I**

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic listening, reading, and writing skills and cultural and geographic awareness.

Offered: Fall, Spring, Summer.

**SPA 101HC Elementary Spanish I for Healthcare**

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading and writing skills and cultural and geographical awareness. Also includes vocabulary in a healthcare context.

*Information: Same as SPA 101. Emphasis on healthcare-related vocabulary.*

Offered: May not be offered this year, check class schedule.

**SPA 101HN Elementary Spanish I: Honors**

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading and writing and cultural and geographical awareness.

*Information: Must qualify for Honors program. SPA 101HN will fulfill any SPA 101 requirement. Faculty or Advisor approval may be required before enrolling in 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; "publishable quality", peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.*

Offered: May not be offered this year, check class schedule.

**SPA 101LE Elementary Spanish I for Law Enforcement**

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading, and writing skills and cultural and geographical awareness. Also includes vocabulary in a law enforcement context.

*Information: Same as SPA 101. Emphasis on law-enforcement-related vocabulary.*

Offered: May not be offered this year, check class schedule.

**SPA 102 Elementary Spanish II**

4 cr. hrs. 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.**Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.*

Offered: Fall, Spring, Summer.

**SPA 102HC Elementary Spanish II for Healthcare**

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 101HC. 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 and vocabulary in a healthcare context.

*Prerequisite(s): SPA 101.**Information: Same as SPA 102. Emphasis on healthcare-related vocabulary.**Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.*

Offered: May not be offered this year, check class schedule.

**SPA 102HN Elementary Spanish II: Honors**

4 cr. hrs. 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.**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.**Information: 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.*

Offered: May not be offered this year, check class schedule.

**SPA 102LE Elementary Spanish II for Law Enforcement**

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 101LE. 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 and vocabulary in a law enforcement context.

*Prerequisite(s): SPA 101.*

*Information: Same as SPA 102. Emphasis on law-enforcement-related vocabulary.*

*Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.*

*Offered: May not be offered this year, check class schedule.*

**SPA 103 Beginning Spanish for Heritage and Bilingual Learners**

4 cr. hrs. 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.

*Information: Ability to speak basic Spanish is required.*

*Offered: Fall, Spring.*

**SPA 106 Beginning Conversation Spanish**

3 cr. hrs. 3 periods (3 lec.)

Introduction to conversational Spanish. Includes basic oral and written forms, grammatical structures, interpersonal transactions, and cultural perspectives. Also includes reading, writing, speaking, and listening skills with primary emphasis on oral communication.

*Offered: May not be offered this year, check class schedule.*

**SPA 107 Intermediate Conversation Spanish**

3 cr. hrs. 3 periods (3 lec.)

Continuation of SPA 106. Includes oral and written communication, additional grammatical structures, additional interpersonal transactions, and additional cultural perspectives. Also includes additional reading, writing, speaking, and listening skills with primary emphasis on oral communication.

*Prerequisite(s): SPA 106.*

*Offered: May not be offered this year, check class schedule.*

**SPA 201 Intermediate Spanish I**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**SPA 201HN Intermediate Spanish I: Honors**

4 cr. hrs. 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.*

*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.*

*Information: 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.*

*Offered: May not be offered this year, check class schedule.*

**SPA 202 Intermediate Spanish II**

4 cr. hrs. 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.*

*Offered: Fall, Spring.*

**SPA 202HN Intermediate Spanish II: Honors**

4 cr. hrs. 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): SPA 201*

*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.*

*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 or research, in class or to a wider audience.*

*Offered: May not be offered this year, check class schedule.*

**SPA 203 Writing and Oral Skills for Heritage and Bilingual Learners**

4 cr. hrs. 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.*

*Information: Prerequisites may be waived with ability to speak Spanish.*

*Offered: Fall, Spring.*

**SPA 251 Intermediate Spanish III**

3 cr. hrs. 3 periods (3 lec.)

Tools for thinking critically and analytically in Spanish. Includes writing proficiency, reading proficiency, and control of language through lexical and grammatical precision.

*Prerequisite(s): SPA 202.*

*Offered: May not be offered this year, check class schedule.*

**SPA 253 Intermediate Spanish for Heritage and Bilingual Learners**

4 cr. hrs. 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.*

*Information: Prerequisites may be waived with ability to speak, read, and write Spanish.*

*Offered: May not be offered this year, check class schedule.*

**SPA 254 Intermediate Grammar and Writing for Spanish Heritage and Bilingual Learners**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**SPA 296 Independent Study in Spanish**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

## Student Success

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**STU 100 College Study Skills**

1 cr. hrs. 1 periods (1 lec.)

Skills and techniques required for being an efficient student. Includes study techniques, memory and concentration, college resources, goal setting, time management, attentive listening, organization of lecture/text material, note taking systems, test taking strategies, and test anxiety.

*Offered: Fall, Spring, Summer.*

**STU 102 Personal Finance in College Decision Making**

1 cr. hrs. 1 periods (1 lec.)

Basic elements of personal and family finances. Includes managing personal finances, funding resources and financial obligations, strategies for success, setting a career direction and taking control of the future, and transition from college into the mainstream.

*Offered: Fall, Spring.*

**STU 105 Math Success Skills**

1 cr. hrs. 1 periods (1 lec.)

Math study and test-taking skills and overcoming math anxiety. Includes effective math study skills, reading a math text, problem solving, current research on math anxiety, and overcoming math anxiety.

*Offered: Fall, Spring.*

**STU 106 Making Career Choices: Interests and Values**

1 cr. hrs. 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 cr. hrs. 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.*

*Offered: Fall, Spring.*

**STU 109 Making Career Choices**

2 cr. hrs. 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.*

*Offered: Fall, Spring.*

**STU 112 Strategies for Taking Control of Your Future**

.25 cr. hrs. .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.*

*Offered: May not be offered this year, check class schedule.*

**STU 121 Adult College Re-entry Skills**

3 cr. hrs. 3 periods (3 lec.)

Designed for adult re-entry to assist in making a smooth transition into college. Includes: career exploration and employability skills; college success skills; college and community resources; and personal, academic and financial goals. Also includes confidence building, gender awareness, and communication in the workplace.

*Offered: May not be offered this year, check class schedule.*

**STU 135 Stress Management**

1 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**STU 150 Becoming a Master Student**

3 cr. hrs. 3 periods (3 lec.)

Enhance academic and personal skills to maximize learning and success at the college level. Includes critical thinking skills, learning styles, college and/or career goals, study skills and personal styles. Also includes examination of human diversity, values, perspectives, as they relate to student's success.

*Recommendation: Completion of REA 091 and WRT 090 before enrolling in this course or concurrent enrollment.*

*Offered: Fall, Spring.*

**STU 200 Becoming a Critical Thinker**

3 cr. hrs. 3 periods (3 lec.)

Development and application of critical thinking strategies. Includes fundamentals of critical thinking and application of thinking skills to everyday issues. Also includes bias, perception, and belief; 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.*

*Offered: Fall, Spring.*

**STU 210 Transfer Strategies**

2 cr. hrs. 2 periods (2 lec.)

Transitioning to a college or university. Includes planning for a successful transfer experience; community college and university resources; and transition procedures, policies, and activities.

*Recommendation: Consult with a counselor or advisor prior to enrolling in this course. Completion of STU 106,107 or 109 is strongly recommended.*

*Offered: Fall, Spring.*

**STU 230 Dynamics of Leadership**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

## Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### TEC 100 Introduction and Overview of Electronics

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### TEC 101 Physics for Technology

3 cr. hrs. 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 122 or TEC 111.

Offered: May not be offered this year, check class schedule.

### TEC 103 Light and Optical Systems

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### TEC 105 Electronic Assembly Tools

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### TEC 111 Applied Math I

2 cr. hrs. 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 handheld calculator.

Offered: May not be offered this year, check class schedule.

### TEC 112 Applied Math II

2 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### TEC 113 Problem Solving for Electronics and Optics

3 cr. hrs. 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 097 or TEC 112 or required score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

**TEC 117 Optical Assembly Techniques**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**TEC 121 Basic Electric and Magnetic Properties**

3 cr. hrs. 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*

*Offered: Fall.*

**TEC 121LB Basic Electric and Magnetic Properties Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 121.

*Prerequisite(s): TEC 100 and 111.*

*Corequisite(s): TEC 121*

*Offered: Fall.*

**TEC 122 Applied Semiconductor Devices**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**TEC 122LB Applied Semiconductor Devices Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 122.

*Prerequisite(s): TEC 113 and 121.*

*Corequisite(s): TEC 122*

*Offered: May not be offered this year, check class schedule.*

**TEC 123 Digital Circuits and Computers**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**TEC 123LB Digital Circuits and Computers Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 123.

*Corequisite(s): TEC 123*

*Offered: May not be offered this year, check class schedule.*

**TEC 125 AC Networks with Phasors**

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 125LB AC Networks with Phasors Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 125.

*Corequisite(s):* TEC 125

*Offered:* May not be offered this year, check class schedule.

**TEC 126 Electronics Construction and Assembly**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**TEC 127 Printed Circuit Board Solder Assembly**

3 cr. hrs. 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.

*Offered:* Fall.

**TEC 128 Electronic Measurements**

2 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 128LB Electronic Measurements Lab**

1 cr. hrs. 2 periods (2 lab)

This is the Lab portion of TEC 128.

*Corequisite(s):* TEC 128

*Offered:* May not be offered this year, check class schedule.

**TEC 130 Computer Assembly and Testing**

3 cr. hrs. 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

*Offered:* Fall.

**TEC 130LB Computer Assembly and Testing Lab**

1 cr. hrs. 2 periods (2 lab)

This is the Lab portion of TEC 130.

*Corequisite(s):* TEC 130

*Offered:* Fall.



**TEC 132 Computer Systems Servicing**

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 132LB Computer Systems Servicing Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 132.

*Corequisite(s):* TEC 132

*Offered:* May not be offered this year, check class schedule.

**TEC 160 Microcomputers and Programming Techniques**

3 cr. hrs. 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 may be waived with consent of instructor.

*Offered:* May not be offered this year, check class schedule.

**TEC 221 Linear Devices**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**TEC 222 Electromechanical Devices and Systems**

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 222LB Electromechanical Devices and Systems Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 222.

*Corequisite(s):* TEC 222

*Offered:* May not be offered this year, check class schedule.

**TEC 225 Fluid Devices and Automated Systems**

2 cr. hrs. 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

*Offered:* Fall.

**TEC 225LB Fluid Devices and Automated Systems Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 225.

*Corequisite(s):* TEC 225

*Offered:* Fall.

**TEC 228 RF and Microwave Devices**

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 228LB RF and Microwave Devices Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 228.

*Corequisite(s):* TEC 228

*Offered:* May not be offered this year, check class schedule.

**TEC 230 Peer-to-Peer Networking and Network Cabling Fundamentals**

3 cr. hrs. 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 may be waived with consent of instructor.

*Offered:* May not be offered this year, check class schedule.

**TEC 230LB Peer-To-Peer Networking and Network Cabling Fundamentals Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 230.

*Corequisite(s):* TEC 230

*Offered:* May not be offered this year, check class schedule.

**TEC 250 Digital Devices**

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 250LB Digital Devices Lab**

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 250.

*Corequisite(s):* TEC 250

*Offered:* May not be offered this year, check class schedule.

**TEC 251 Analog Circuits**

3 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 251LB Analog Circuits Lab**

1 cr. hrs. 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

*Offered:* May not be offered this year, check class schedule.

**TEC 286 Fiber Optics Installation and Testing**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**TEC 287 Laser Fundamentals**

3 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

**TEC 288 Optical Testing**

4 cr. hrs. 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.

*Offered:* May not be offered this year, check class schedule.

## Theater

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**THE 104 Voice and Movement for the Actor**

3 cr. hrs. 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 character.

*Information:* May be taken five times for a maximum of fifteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Offered:* Fall, Spring.

**THE 105 Theater Appreciation**

3 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**THE 110 Movement and Dance for Actors**

2 cr. hrs. 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.

Offered: Fall, Spring.

**THE 111 Stagecraft**

3 cr. hrs. 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*

Offered: Fall, Spring.

**THE 113 Stagecraft Crew**

1 cr. hrs. 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*

Offered: Fall, Spring.

**THE 118 Basic Theater Graphics**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**THE 125 Theater Production**

2 cr. hrs. 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: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor required before enrolling in this course.*

Offered: Fall, Spring.

**THE 140 History of Theater to the 18th Century**

3 cr. hrs. 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.

Offered: Fall.

**THE 148 Costume Design**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**THE 149 Introduction to Acting I**

3 cr. hrs. 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.

*Offered: Fall, Spring.*

**THE 151 Introduction to Acting II**

3 cr. hrs. 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.*

*Offered: Spring.*

**THE 210 Screen Acting**

2 cr. hrs. 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.

*Offered: Fall, Spring.*

**THE 220 Stage Lighting**

3 cr. hrs. 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*

*Offered: Fall.*

**THE 222 Stage Lighting Crew**

1 cr. hrs. 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*

*Offered: Fall.*

**THE 223 Scene Design**

3 cr. hrs. 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.

*Offered: May not be offered this year, check class schedule.*

**THE 245 Principles of Dramatic Structure**

3 cr. hrs. 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.

*Offered: Spring.*

**THE 250 Acting: Auditioning for Theater**

3 cr. hrs. 4 periods (2 lec., 2 lab)

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 resumé 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 monologues basics, auditioning, and performance of classical monologues..

*Prerequisite(s): THE 149.*

Offered: Fall.

**THE 251 Acting: Shakespeare and Classical Literature**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Performance-oriented class focuses on the practice and theory of pre-realistic styles of acting, and focuses on 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.*

Offered: Spring.

**THE 296 Independent Studies in Theater**

1-4 cr. hrs. 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: May be taken eight times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Information: Consent of instructor is required before enrolling in this course.*

Offered: May not be offered this year, check class schedule.

## Therapeutic Massage

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**TMA 101 Introduction to Massage Therapy**

3 cr. hrs. 3 periods (3 lec.)

Survey of massage therapy practice including history, overview of bodywork systems, benefits and indications of massage, and legal requirements of practice in Arizona.

Offered: Fall.

**TMA 120 Professionalism and Ethics for Massage Therapists**

2 cr. hrs. 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.

Offered: Fall.

**TMA 201IN Therapeutic Massage Practices I**

6 cr. hrs. 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: BIO 160IN, TMA 101, TMA 120, WED 110, and WED 111.*

Offered: Fall.

**TMA 202IN Therapeutic Massage Practices II**

6 cr. hrs. 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.*

*Offered: Spring.*

**TMA 202LC Therapeutic Massage Practice Clinical Lab I**

1 cr. hrs. 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*

*Offered: Spring.*

**TMA 203IN Therapeutic Massage Practices III**

6 cr. hrs. 9 periods (3 lec., 6 lab)

Refinement and integration of technical skills, psychosocial competencies, and role identity. Exploration of techniques to assess and facilitate range of motion and functions; purpose, benefits, indications, and contraindications of therapeutic massage for specific neuro-musculoskeletal disorders/injury and special populations. Application of massage techniques with therapist's pre- and post-client evaluations of the client. Adaptation of massage techniques for special populations.

*Prerequisite(s): With a grade of C or better: TMA 202IN, 210, and 215.*

*Corequisite(s): TMA 203LC.*

*Information: Course restricted to students admitted to program.*

*Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

*Offered: Spring.*

**TMA 203LC Therapeutic Massage Practice Clinical Lab II**

1 cr. hrs. 3 periods (3 lab)

Students practice and perfect the application of Swedish and Deep Tissue massage techniques in a supervised, supportive learning environment in an onsite clinical setting. Course reinforces massage theory and practice learned in TMA 202IN.

*Corequisite(s): TMA 203IN*

*Offered: Spring.*

**TMA 210 Fundamentals of Kinesiology**

3 cr. hrs. 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.*

*Offered: Fall.*

**TMA 214 Pregnancy Massage**

1 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**TMA 215 Introduction to Pathology for Massage and Bodywork**

3 cr. hrs. 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.

Offered: Spring.

**TMA 222 Business Management for Massage and Bodywork**

2 cr. hrs. 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.

*Recommendation:* Concurrent enrollment in TMA 290LC.

Offered: Summer.

**TMA 225 Massage in Health Care Settings**

1.5 cr. hrs. 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.)

Offered: May not be offered this year, check class schedule.

**TMA 240 Therapeutic Massage National Certification Exam Preparation**

2 cr. hrs. 2 periods (2 lec.)

Preparation for National Certification Exam in Therapeutic Massage and Bodywork. Includes anatomy, physiology, kinesiology, and pathology of body systems; Asian and non-Western bodywork approaches; massage and bodywork assessment, theory and application. Also includes professional standards, ethics, and business and legal practices; effective study approaches; and test-taking strategies.

*Information:* Offered for current massage students, licensed massage therapists, or bodyworkers.

Offered: May not be offered this year, check class schedule.

**TMA 290LC Therapeutic Massage Clinical**

3 cr. hrs. 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 101, 120, 201IN, 202IN, 202LC, 203IN, 203LC, 210, 215, WED 110 and 111.

Offered: Summer.

**TMA 291 Therapeutic Massage Internship**

1 cr. hrs. 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: TMA 101, 120, 201IN, 202IN, 202LC, 203IN, 203LC, 210, 215, WED 110 and 111.

*Information:* May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

*Information:* Students enrolling for the first time must take the course concurrently with TMA 290LC.

Offered: Summer.



**TMA 296 Therapeutic Massage Independent Study**

1-3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Translation and Interpretation Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**TRS 101 Introduction to Translation and Interpretation**

3 cr. hrs. 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.

Offered: Fall.

**TRS 102 English and Spanish for Translation**

4 cr. hrs. 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.

Offered: Fall.

**TRS 120IN Technology for Translation and Interpretation**

2 cr. hrs. 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: IN is the integrated version of the course with the lecture and lab taught simultaneously.*

Offered: Fall.

**TRS 150 Survey of Translation Specialty Areas**

4 cr. hrs. 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.

Offered: Spring.

**TRS 160 Translation in Specialty Areas**

4 cr. hrs. 4 periods (4 lec.)

Principles and procedures for translating specialty area materials. Includes health care, legal, commercial/business, and literary translation exercises.

Offered: Spring.

**TRS 161 Medical Spanish and English Interpreting**

3 cr. hrs. 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.*

Offered: Fall.

**TRS 162 Introduction to Legal Spanish/English Interpretation**

3 cr. hrs. 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.*

Offered: Spring.

**TRS 202 Interpretation Techniques**

3 cr. hrs. 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.

*Information: Consent of instructor is required before enrolling in this course.*

*Information: See the TRS instructor or department chair for more prerequisite information.*

Offered: Spring.

**TRS 203 Consecutive Interpretation and Sight Translation**

4 cr. hrs. 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.

Offered: Fall.

**TRS 270 Simultaneous Interpretation**

4 cr. hrs. 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.

Offered: Fall.

**TRS 282 Advanced Project in Translation**

4 cr. hrs. 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.

Offered: Spring.

## Travel and Tourism Operations

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**TVL 101 Introduction to the Travel Industry**

3 cr. hrs. 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.

Offered: Fall.

**TVL 102 Computerized Reservation Systems**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**TVL 103 Geography for the Tourism Professional**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**TVL 109 Survey of Leisure Products**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**TVL 121 Tourism Sales and Marketing**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**TVL 211 Tour Direction and Tour Group Management**

3 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

**TVL 296 Independent Study in Travel/Tourism**

1-3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall.

## Truck Driver Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**TDT 111 Role of Commercial Trucking in Supply Chain Management**

4 cr. hrs. 4 periods (4 lec.)

Introduction to the commercial truck driving and transportation industry. Includes an overview of supply chain management and relevant importance of the transportation industry in America. Also includes federal and state rules and regulations, careers in trucking, over-the road performance expectations, professional communications, healthy lifestyles, money management, and tools for a successful career

*Information: Admission to the Truck Driver Training Program is required prior to registration.*

Offered: May not be offered this year, check class schedule.

**TDT 116 Basic Vehicle Operations-Coach/Transit Bus**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**TDT 117 Basic Driving Maneuvers - Coach/Transit Bus**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**TDT 118 Basic Vehicle Operations and Commercial Driver's License Requirements**

5 cr. hrs. 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.*

Offered: Fall.

**TDT 119 Basic Driving Maneuvers – Class A CDL**

3.5 cr. hrs. 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.*

Offered: Fall.

**TDT 120 Truck Driver Training Refresher**

3.5 cr. hrs. 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.*

Offered: Fall.

**TDT 122 Safety Awareness in the Transportation Industry**

4 cr. hrs. 4 periods (4 lec.)

Essential awareness of commercial motor vehicle safety. Includes proper daily vehicle inspections and systems analysis, cargo securement, identifying driving hazards and safe driving techniques, emergency maneuvers, and accident procedures. Also includes regulating agency presentations, and cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), and first aid training and certification.

*Information: Admission to the Truck Driver Training Program is required prior to registration.*

Offered: May not be offered this year, check class schedule.

## Veterinary Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**VSC 290 Veterinary Science Internship**

1-4 cr. hrs. 5-20 periods (5-20 lab)

Internship and work experience in a veterinary science field or laboratory. Includes setting, achieving, and evaluating goals for hands-on learning experiences in veterinary sciences. Also includes development of skills and knowledge needed to work in a veterinary science field or laboratory.

*Information: Six credit hours of Veterinary Science and consent of instructor are required before enrolling in this course.*

Offered: Fall, Spring, Summer.

## Veterinary Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### VET 100 Introduction to Veterinary Technology

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### VET 106 Veterinary Practice Assistant I

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### VET 107 Veterinary Practice Assistant II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of VET 106. Includes pharmacy, surgical, laboratory and imaging skills.

*Corequisite(s): VET 106, VET 108*

*Information: Consent of program faculty is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

### VET 108 Introduction to Veterinary Facility Practices

6 cr. hrs. 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*

*Information: Consent of program faculty is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

### VET 110 Veterinary Nursing Procedures I

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

### VET 111 Veterinary Nursing Procedures II

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 120 Clinical Pathology I**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 121 Clinical Pathology II**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 130 Animal Anatomy and Physiology I**

4 cr. hrs. 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.

*Corequisite(s): VET 100, VET 110, VET 225*

*Information: Admission to Veterinary Technology program is required before enrolling in this course.*

*Offered: May not be offered this year, check class schedule.*

**VET 131 Animal Anatomy and Physiology II**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 150 Pharmacology**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 191 Veterinary Technician Clinical Experience I**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**VET 196 Independent Study in Veterinary Technology**

1-3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**VET 200 Anesthetic and Surgical Nursing**

3 cr. hrs. 4 periods (2 lec., 2 lab)

Techniques and procedures involving surgery and anesthesia. Includes preparation and identification of instruments and equipment, routine surgical procedures and handling of instruments and supplies during surgery. Also includes anesthesia induction and monitoring, post surgical care, clean up and surgical record keeping.

*Prerequisite(s): VET 111, 120, 131 and 150.*

*Corequisite(s): VET 121, VET 211*

*Offered: May not be offered this year, check class schedule.*

**VET 205 Radiology and Imaging Techniques**

2 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 205LB Radiology and Imaging Techniques Lab**

1 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 210 Veterinary Nursing Procedures: Large Animal Care**

2 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 211 Veterinary Nursing Procedures: Avian, Exotic and Lab Animals**

2 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 220 Clinical Pathology III**

3 cr. hrs. 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*

*Offered: May not be offered this year, check class schedule.*

**VET 225 Veterinary Hospital Procedures**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**VET 230 VTNE and AZ State Veterinary Medical Examining Board Review**

3 cr. hrs. 3 periods (3 lec.)

Preparation for a Veterinary Assistant or non-certified Technician to sit for the national and state Veterinary Technician Board Exams. 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 techniques and practice board exams.

Offered: May not be offered this year, check class schedule.

**VET 291 Veterinary Technician Clinical Experience II**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

## Welding

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

**WLD 110 Basic Arc and Oxyacetylene Welding**

4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**WLD 115 Blueprint Reading/Estimating**

4 cr. hrs. 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): MAT 082 or required score on math assessment test.*

Offered: Fall, Spring.

**WLD 120 Welding for Metal Sculpture**

4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**WLD 160 Arc Welding**

4 cr. hrs. 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.*

Offered: Fall, Spring.



**WLD 250 Pipe Welding**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**WLD 261 Gas Metal Arc Welding**

4 cr. hrs. 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.

Offered: Fall, Spring, Summer.

**WLD 262 Gas Tungsten Arc Welding**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**WLD 263 Layout and Fabrication Welding**

4 cr. hrs. 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.*

Offered: Fall, Spring.

**WLD 296 Welding Independent Projects**

1-4 cr. hrs. 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.*

*Information: May be repeated up to three times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: May not be offered this year, check class schedule.

## Wellness Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### WED 110 Introduction to Complementary and Alternative Medicine

3 cr. hrs. 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.

Offered: Fall.

### WED 111 Self Care for Personal Wellness

2 cr. hrs. 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.

Offered: Fall.

### WED 120 Introduction to Energy Healing

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### WED 121 Reiki I

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### WED 122 Reiki II

1 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

### WED 124 Craniosacral Therapy for Massage Therapists and Health Professionals

2 cr. hrs. 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.)*

Offered: May not be offered this year, check class schedule.

## Writing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

### WRT 070 Developmental Writing

3 cr. hrs. 3 periods (3 lec.)

Development of fundamental writing skills. Includes writing processes and sentence development and structure.

*Prerequisite(s):* Required score on Writing assessment test.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070.

*Information:* Equivalent to WRT 075.

Offered: Fall, Spring.

### WRT 070A Developmental Writing: Module A

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills. Includes writing processes and sentence development and structure.

*Prerequisite(s):* Required score on Writing assessment test.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070.

*Information:* A student may concurrently enroll in WRT 070A, 070B, and 070C.

*Information:* Equivalent to WRT 075A.

Offered: Fall, Spring.

### WRT 070AL Developmental Writing with Individualized Instruction

4 cr. hrs. 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.

Offered: May not be offered this year, check class schedule.

### WRT 070B Developmental Writing: Module B

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills. Includes intermediate sentence development, structure and written works.

*Prerequisite(s):* WRT 070A with a C or better, or concurrent enrollment.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070.

*Information:* A student may concurrently enroll in WRT 070A, 070B, and 070C.

*Information:* Equivalent to WRT 075B.

Offered: Fall, Spring.

### WRT 070C Developmental Writing: Module C

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills. Includes advanced sentence development, structure and written works.

*Prerequisite(s):* WRT 070B with a C or better, or concurrent enrollment; or concurrent enrollment in WRT 070A and 070B.

*Information:* WRT 070A, 070B, and 070C together constitute WRT 070.

*Information:* A student may concurrently enroll in WRT 070A, 070B, and 070C.

*Information:* Equivalent to WRT 075C.

Offered: Fall, Spring.

### WRT 072 Sentence Patterns

1 cr. hrs. 1 periods (1 lec.)

Review of various types of sentence structures. Includes variety of sentences, common grammar and sentence errors, punctuation, and short papers.

Offered: Fall.

### WRT 073 Punctuation

1 cr. hrs. 1 periods (1 lec.)

Review of punctuation mechanics. Includes rules of punctuation, punctuation mark usage, and written assignments.

Offered: Fall.

**WRT 075 Developmental Writing for Non-Native Speakers of English**

3 cr. hrs. 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 test.

*Information:* WRT 075A, 075B, and 075C together constitute WRT 075.

*Information:* Equivalent to WRT 070.

*Offered:* May not be offered this year, check class schedule.

**WRT 075A Developmental Writing for Non-Native Speakers of English: Module A**

1 cr. hrs. 1 periods (1 lec.)

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 Writing assessment test.

*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.

*Offered:* Fall, Spring.

**WRT 075B Developmental Writing for Non-Native Speakers of English: Module B**

1 cr. hrs. 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):* WRT 075A with a C or better or concurrent enrollment in WRT 075A and/or 075C.

*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.

*Offered:* Fall, Spring.

**WRT 075C Developmental Writing for Non-Native Speakers of English: Module C**

1 cr. hrs. 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):* WRT 075B with a C or better or concurrent enrollment in WRT 075A and/or 075B.

*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.

*Offered:* Fall, Spring.

**WRT 090 Writing Fundamentals**

3 cr. hrs. 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: ESL 088WG or WRT 070 or 075 or required score on the Writing assessment.

*Information:* WRT 090A, 090B, and 090C together constitute WRT 090. Equivalent to WRT 096.

*Offered:* Fall, Spring, Summer.

**WRT 090A Writing Fundamentals: Module A**

1 cr. hrs. 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: ESL 088WG or WRT 070 or 075 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.

*Offered:* Fall, Spring, Summer.

**WRT 090B Writing Fundamentals: Module B**

1 cr. hrs. 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): WRT 090A with a C or better 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.*

Offered: Fall, Spring, Summer.

**WRT 090C Writing Fundamentals: Module C**

1 cr. hrs. 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): WRT 090B with a C or better or concurrent enrollment in WRT 090A and/or 090B.*

*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.*

Offered: Fall, Spring, Summer.

**WRT 090P Writing Fundamentals Plus**

4 cr. hrs. 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): WRT 070, 075 with a C or better, or required score on the Writing assessment or ESL 088WG with a B or better.*

*Information: WRT 090PA, 090PB, 090PC, and 090PD together constitute WRT 090P. Equivalent to WRT 096P.*

Offered: Fall, Spring.

**WRT 090PA Writing Fundamentals Plus: Module A**

1 cr. hrs. 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): WRT 070, 075 with a C or better, or required score on the Writing assessment or ESL 088WG with a B or better.*

*Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PA*

Offered: Fall, Spring.

**WRT 090PB Writing Fundamentals Plus: Module B**

1 cr. hrs. 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 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.*

*Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PB.*

Offered: Fall, Spring.

**WRT 090PC Writing Fundamentals Plus: Module C**

1 cr. hrs. 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 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.*

*Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PC.*

Offered: Fall, Spring.

**WRT 090PD Writing Fundamentals Plus: Module D**

1 cr. hrs. 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 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.*

*Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PD.*

Offered: Fall, Spring.

**WRT 090R Integrated Writing and Reading Fundamentals**

6 cr. hrs. 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: ESL 088WG, or WRT 070, or required score on the Writing assessment.*

*Information: This course fulfills REA 091 and WRT 090.*

Offered: Fall, Spring, Summer.

**WRT 090S Writing Fundamentals**

4 cr. hrs. 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): 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.*

Offered: Fall, Spring.

**WRT 096 Writing Fundamentals for Non-Native Speakers of English**

3 cr. hrs. 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 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. Equivalent to WRT 090.*

Offered: Fall, Spring.

**WRT 096A Writing Fundamentals for Non-Native Speakers of English: Module A**

1 cr. hrs. 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.*

Offered: Fall, Spring, Summer.

**WRT 096B Writing Fundamentals for Non-Native Speakers of English: Module B**

1 cr. hrs. 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): WRT 096A with a C or better or concurrent enrollment in WRT 096A and/or 096C.*

*Information: WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT 096A, 096B, and 096C. Equivalent to WRT 090B.*

Offered: Fall, Spring, Summer.

**WRT 096C Writing Fundamentals for Non-Native Speakers of English: Module C**

1 cr. hrs. 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):* WRT 096B with a C or better 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.

Offered: Fall, Spring, Summer.

**WRT 096P Writing Fundamentals Plus for Non-Native Speakers of English**

4 cr. hrs. 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):* WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090P.

Offered: Fall, Spring.

**WRT 096PA Writing Fundamentals Plus for Non-Native Speakers of English: Module A**

1 cr. hrs. 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):* WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PA.

Offered: Fall, Spring.

**WRT 096PB Writing Fundamentals Plus for Non-Native Speakers of English: Module B**

1 cr. hrs. 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 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PB.

Offered: Fall, Spring.

**WRT 096PC Writing Fundamentals Plus for Non-Native Speakers of English: Module C**

1 cr. hrs. 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 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PC.

Offered: Fall, Spring.

**WRT 096PD Writing Fundamentals Plus for Non-Native Speakers of English: Module D**

1 cr. hrs. 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 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

*Information:* WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PD.

Offered: Fall, Spring.

**WRT 101 Writing I**

3 cr. hrs. 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):* ESL 088WG with a B or better, WRT 090 or 096 with a C or better or required score on the Writing assessment.

Offered: Fall, Spring, Summer.

**WRT 101A Writing I: Module A**

1 cr. hrs. 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):* ESL 088WG with a B or better, or WRT 090 or 096 with a C or better, or required score on the Writing assessment.

*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.

Offered: Fall, Spring.

**WRT 101B Writing I: Module B**

1 cr. hrs. 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 101A with a C or better 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.

Offered: Fall, Spring.

**WRT 101C Writing I: Module C**

1 cr. hrs. 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 101B with a C or better 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.

Offered: Fall, Spring.

**WRT 101HC Writing I: Honors**

3 cr. hrs. 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 assessment score required.

*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 publishable quality, peer reviewed paper or project in a format appropriate for the discipline; presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

**WRT 101S Writing I / Integrated Studio**

4 cr. hrs. 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):* Placement into WRT 090 on the Writing assessment or placement into ESL 088WG with a B or better.

*Information:* Equivalent to WRT101. For students who assess into WRT 090 but believe that with additional studio instruction they can successfully complete WRT101.

Offered: Fall, Spring.

**WRT 102 Writing II**

3 cr. hrs. 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):* WRT 101 or 107 with a C or better.

Offered: Fall, Spring, Summer.



**WRT 102A Writing II: Module A**

1 cr. hrs. 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):* WRT 101 or 107 with a C or better.

*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.

Offered: Fall, Spring.

**WRT 102B Writing II: Module B**

1 cr. hrs. 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 in WRT 102A.

*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.

Offered: Fall, Spring.

**WRT 102C Writing II: Module C**

1 cr. hrs. 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 in WRT 102A and 102B.

*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.

Offered: Fall, Spring.

**WRT 102HC Writing II: Honors**

3 cr. hrs. 3 periods (3 lec.)

Continuation of WRT 101 or WRT 101HC. Includes writing analytical or critical papers, analysis and discussion of various types of literature, developing advanced research and critical thinking skills, and written works. Also includes writing a research paper as well as additional Honors level content.

*Prerequisite(s):* WRT 101 or WRT 101HC with a C or better.

*Information:* Qualification for Honors program and consent of instructor or advisor/counselor is required before enrolling in 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; publishable quality, peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.

Offered: Spring.

**WRT 107 Writing I for Non-Native Speakers of English**

3 cr. hrs. 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

*Prerequisite(s):* ESL 088WG with a B or better, or WRT 090 or 096 with a C or better, or required score on the Writing assessment.

*Information:* WRT 107A, 107B, and 107C together constitute WRT 107. Equivalent to WRT 101.

Offered: Fall.

**WRT 107A Writing I for Non-Native Speakers of English: Module A**

1 cr. hrs. 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):* ESL 088WG with a B or better, or WRT 090 or 096 with a C or better, or required score on Writing assessment.

*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.

Offered: Fall, Spring.

**WRT 107B Writing I for Non-Native Speakers of English: Module B**

1 cr. hrs. 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.

Offered: Fall, Spring.

**WRT 107C Writing I for Non-Native Speakers of English: Module C**

1 cr. hrs. 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.

Offered: Fall, Spring.

**WRT 108 Writing II for Non-Native Speakers of English**

3 cr. hrs. 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):* WRT 101 or 107 with a C or better.

*Information:* Equivalent to WRT 102.

Offered: May not be offered this year, check class schedule.

**WRT 108A Writing II for Non-Native Speakers of English: Module A**

1 cr. hrs. 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):* WRT 101 or 107 with a C or better.

*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.

Offered: Fall, Spring.

**WRT 108B Writing II for Non-Native Speakers of English: Module B**

1 cr. hrs. 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 in WRT 108A.

*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.

Offered: Fall, Spring.

**WRT 108C Writing II for Non-Native Speakers of English: Module C**

1 cr. hrs. 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 in WRT 108A and 108B.

*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.

Offered: Fall, Spring.

**WRT 125 Beginning Poetry Writing**

3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**WRT 126 Basics of Short Story Writing**

3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

Offered: Fall, Spring.

**WRT 140 Writing and Editing Technical Communications**

3 cr. hrs. 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.*

Offered: May not be offered this year, check class schedule.

**WRT 140A Writing and Editing Technical Communications: Module A**

1 cr. hrs. 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.*

Offered: Fall, Spring.

**WRT 140B Writing and Editing Technical Communications: Module B**

1 cr. hrs. 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.*

Offered: Fall, Spring.

**WRT 140C Writing and Editing Technical Communications: Module C**

1 cr. hrs. 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.*

Offered: Fall, Spring.

**WRT 154 Career Communications**

3 cr. hrs. 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.*

*Offered: May not be offered this year, check class schedule.*

**WRT 154A Career Communication: Job Related Writing Principles and Skills**

1 cr. hrs. 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.*

*Offered: Fall, Spring.*

**WRT 154B Career Communications: Basic Job Related Correspondence**

1 cr. hrs. 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.*

*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.*

*Offered: Fall, Spring.*

**WRT 154C Career Communications: Basic Job Related Reports**

1 cr. hrs. 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.*

*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.*

*Offered: Fall, Spring.*

**WRT 162 Literary Magazine Workshop**

3 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Spring.*

**WRT 196 Independent Studies in Writing**

1-4 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**WRT 205 Introduction to Poetry Writing**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**WRT 206 Short Story Writing**

3 cr. hrs. 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.*

*Offered: Fall, Spring.*

**WRT 207 Creative Nonfiction**

3 cr. hrs. 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.*

*Offered: Fall.*

**WRT 215 Advanced Poetry Writing**

3 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**WRT 216 Advanced Fiction Writing**

3 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**WRT 217 Advanced Creative Nonfiction**

3 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: Fall.*

**WRT 226 Special Projects in Fiction**

3 cr. hrs. 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.*

*Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

**WRT 254 Advanced Professional Communications**

3 cr. hrs. 3 periods (3 lec.)

Techniques of writing for scientific, technical and other professional occupations. Includes writing long and short reports, researching and writing about a topic, presentations, and use of appropriate style.

*Prerequisite(s): WRT 102 or 108 with a C or better.*

*Information: WRT 254A, 254B, and 254C together constitute WRT 254.*

*Offered: May not be offered this year, check class schedule.*

**WRT 254A Advanced Professional Communications: Module A**

1 cr. hrs. 1 periods (1 lec.)

Techniques of writing for scientific, technical, and other professional occupations. Includes writing long and short reports at a beginning level and researching and writing about a topic at a beginning level.

*Prerequisite(s): WRT 102 or 108 with a C or better.*

*Information: WRT 254A, 254B, and 254C together constitute WRT 254. A student may concurrently enroll in WRT 254A, 254B, and 254C.*

*Offered: Fall, Spring.*

**WRT 254B Advanced Professional Communications: Module B**

1 cr. hrs. 1 periods (1 lec.)

Techniques of writing for scientific, technical, and other professional occupations. Includes writing long and short reports at an intermediate level and researching and writing about a topic at an intermediate level.

*Prerequisite(s): WRT 254A with a C or better or concurrent enrollment in WRT 254A and/or 254C.*

*Information: WRT 254A, 254B, and 254C together constitute WRT 254. A student may concurrently enroll in WRT 254A, 254B, and 254C.*

*Offered: Fall, Spring.*

**WRT 254C Advanced Professional Communications: Module C**

1 cr. hrs. 1 periods (1 lec.)

Techniques of writing for scientific, technical, and other professional occupations. Includes researching and writing about a topic at an advanced level and presentations.

*Prerequisite(s): WRT 254B with a C or better or concurrent enrollment in WRT 254A and/or 254B.*

*Information: WRT 254A, 254B, and 254C together constitute WRT 254. A student may concurrently enroll in WRT 254A, 254B, and 254C.*

*Offered: Fall, Spring.*

**WRT 285 Pima Writers' Workshop**

2 cr. hrs. 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. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.*

*Offered: May not be offered this year, check class schedule.*

# 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>

<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.

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/2016/gedt-66.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/2016/gedt-68.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 790	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/2016/gedt-71.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/gainful-employment/2016/gedt-69.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/2016/gedt-19.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 I.....	18
BO 714	Introduction to Diagnostic Coding.....	8
BO 716	Introduction to Procedural Coding.....	15
<b>Total for Medical Office Clerk Certificate.....</b>		<b>120</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 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>

## Medical Records Technician – Certificate for Direct Employment

Review program costs, student debt, on-time graduation and more:  
<https://www.pima.edu/programs-courses/gainful-employment/2016/gedt-47.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 713	Medical Terminology 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 909A	Microsoft Word IIIA . . . . .	15
BO 992	Medical Office Externship . . . . .	120
<b>Total for Medical Records Certificate . . . . .</b>		<b>924</b>

## Medical Terminology – Certificate for Direct Employment

Module Number	Course Title	Clock Hours
<b>Required Modules</b>		
BO 713	Medical Terminology I . . . . .	18
BO 813	Medical Terminology 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 I .....	18
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 819	Human Anatomy for Medical Coding .....	7
BO 915	Advanced Procedural Coding .....	40
<b>Total for Professional Medical Coding Specialist Certificate . . . . .</b>		<b>270</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/2016/gedt-67.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/2016/gedt-94.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/2016/gedt-4.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/2016/gedt-75.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/2016/gedt-76.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.....	120
<b>Total for Nursing Assistant Certificate</b> .....		<b>120</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/2016/gedt-98.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
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>1350</b>
<b>Optional Modules</b>		
HO 716	NCLEX-PN Preparation.....	30
<b>Total with optional modules</b> .....		<b>1380</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/2016/gedt-52.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 Board of Governors

	<b>Term Expires</b>
<b>Mark Hanna</b>	District 1, Dec. 2020
<b>Demion Clinco</b>	District 2, Dec. 2016
<b>Sylvia M. Lee, Ph.D.</b>	District 3, Dec. 2018
<b>Scott A. Stewart</b>	District 4, Dec. 2016
<b>Martha Durkin</b>	District 5, Dec. 2016

### College District Administrators

#### District Office

##### Office of the Chancellor

#### Lee D. Lambert, Chancellor

B.A. The Evergreen State College; J.D. Seattle University

#### Vacant, Assistant Vice Chancellor

B.A. Brandeis University; M.A. University of Arizona

#### Jeffrey S. Silvyn, College General Counsel

B.A. Johns Hopkins University; J.D. University of California, Los Angeles

#### 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.A. 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)

**Vacant, Assistant Vice Chancellor for Academic/Student Services Certification and Development**

**Office of the Vice Chancellor for Operations**

**Lisa Brosky, Vice Chancellor for External Relations**

B.A. Eastern Kentucky University; M.A. Ohio State University

**Rachel Schaming, Interim Executive Director for the Pima Community College Foundation**

B.S. University of Florida

**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

**Vacant, Assistant Vice Chancellor for Finance**

**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

**Michelle D. Nieuwenhuis, Interim Chief of the Department of Public Safety**

B.A. Western New Mexico University; M.Ed. Northern Arizona 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., M.A. Minnesota State University Moorhead

**Irene Robles-Lopez, Vice President of Academic Advising and Retention**

B.I.S. University of Texas – El Paso; M.C. University of Phoenix

**Dr. Ian Roark, Vice President of Workforce Development**

B.Mus. Angelo State University; M.Ed. University of Texas at Permian Basin; D.Ed. University of Texas at San Antonio

**Vacant, Dean of Distance Learning**

**Amanda Abens, Dean of Workforce Development and Continuing Education (Acting)**

B.A. University of Arizona; M.C. University of Phoenix

**Regina Suitt, Dean of Adult Basic Education for College and Career**

B.A. Iowa State University; M.Ed. Northern Arizona University

**Desert Vista Campus**

**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, Vice President of Instruction**

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 and Academic Assessment**

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

**Vacant, Vice President of Instruction and Academic Operations**

**Yira Brimage, Vice President of Student Engagement**

B.A. Arizona State University; M.Ed. Northern Arizona University

**Julianna Wilson, Dean of Science and Communication Arts (Acting)**

B.S., M.A. University of Arizona

**Gregory J. Wilson II, Dean of Applied Technology Programs**

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

### **Suzanne Desjardin, Dean of Social Sciences and Student Affairs (Acting)**

A.A. Pima Community College; B.A. University of Arizona; M.C.  
University of Phoenix; M.A. Arizona State University

## 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.S., M.A. University of Arizona

## West Campus

### **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

### **Christina Felty, Vice President of Instruction and Transfer Pathways (Acting)**

B.F.A. Virginia Commonwealth University; M.A. University of Arizona

### **Vacant, Vice President for International Development**

### **Dr. Mark Nelson, Dean of Arts and Humanities (Acting)**

B.A. Point Loma Nazarene University; M.Ed. University of Vermont;  
M.M., D.M.A. Arizona State University

### **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 Board of Governors 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 Central Office, the College district, and the Pima 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

## Distinguished Staff Status

The Board of Governors 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

**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

**Antonio Arroyo, Librarian (1996)**

A.A. Fullerton College; B.A. Whittier College; M.S. California State University-Fullerton

**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

**Glenn Baron, Hotel and Restaurant Management (2013)**

B.C. University of Guelph; M.Ed. McGill University

**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

**Dr. Cheryl K. Blake, Biology (2005)**

A.B., M.A., Ph.D., Indiana University

**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

**Monica J. Brito, Spanish (1992)**

A.B. St. Francis College; M.A. 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. Ricardo Castro-Salazar, History/Political Science (1999)**

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. Ann Christensen, Biology (1992)**  
B.S., M.S. Concordia University; Ph.D. Queen's University
- 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
- Eric Comport, Librarian (2003)**  
B.A., M.A. University of Arizona
- 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
- Fred D'Angelo, Computer Information Systems/Computer Software Applications (2010)**  
B.S. University of Connecticut; M.S. University of Hartford
- Amy Davis, Counselor (2007)**  
B.A., 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. Western Illinois University; M.A. Iowa State University
- Suzanne Desjardin, Counselor (2003)**  
A.A. Pima Community College; B.A. University of Arizona; M.C. University of Phoenix
- Kathryn Di Pierro, 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 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
- Christina B. Felty, Art (1997)**  
B.F.A. Virginia Commonwealth University; M.A. University of Arizona
- 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
- Margaret K. Files, Writing (1987)**  
A.B., A.M. University of Illinois
- Joseph Fitzpatrick, Welding (2007)**  
Industry certifications: Welding Certifications, ABC Technical and Trade Schools; Metallurgy Certificate of Completion, Arizona Air National Guard 162nd
- 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
- Martha L. Frailey, Reading (1990)**  
B.S. University of Dayton; M.Ed. University of Arizona
- 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 of 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
- 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
- Dianne Gregory, Writing (2014)**  
B.A., M.A. University of Northern Iowa
- 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
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B.A. University of Colorado; D.V.M. Colorado State University
- Tanya M. Hawks, Counselor (2015)**  
B.A. University of Arizona; M.A. Midwestern 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

**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

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B.A. University of Colorado, Boulder; M.A. University of Arizona

**Barry T. Infuso, Culinary Arts (2000)**

A.A. Foothill Community 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

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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. Colleen Kelley, Chemistry (2002)**

B.S. University of Richmond; Ph.D. Pennsylvania State University

**Dr. Jacqueline D. Kern, Nursing (2012)**

B.S.N., M.S., Ph.D. University of Arizona

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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

**Steve J. Kusnir, Mathematics (1996)**

B.Math, M.Math University of Waterloo

**Joseph K. Labuda, Librarian (1990)**

B.A. State University of New York-Plattsburgh; M.L.S. University of Arizona

**Cynthia Lancaster, Journalism (2007)**

B.S. University of Arizona; M.A. University of Arizona

**Dennis C. Landry, Digital Arts (1999)****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

**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

**Roxanna C. Lovio, Counselor (1999)**

B.A. University of Arizona; M.Ed. Northern Arizona University

**Cydnee Ludt, Biology (2008)**

B.A., M.S. University of Arizona

**Dr. Wade Lueck, Psychology (2010)**

B.S., M.S., Ph.D. Brigham Young University

**Diane C. Lussier, Mathematics (1999)**

B.A., M.A. California State University-Fullerton

**Steven A. Mackie, Biology (1997)**

B.S. Arizona State University; M.S. University of Arizona

**Dr. Ana M. Mantilla, Mathematics (1996)**

B.S. Universidad Nacional de Trujillo; M.S., Ph.D. Northwestern University

**Jolene W. Marcelli, Nursing (2011)**

B.S.N. University of North Dakota; M.S. University of Phoenix

**Sarah A. Marcus, Dental Assisting Education (2006)**

A.G.S. Pima Community College; B.S. University of Phoenix

**Linda Marks, Paralegal (2009)**

B.A. State University of New York; M.S. University of Phoenix

- Erica A. Martin, Counselor (2012)**  
B.A. University of Arizona; M.Ed. Northern Arizona University
- Mary Ann Martinez-Sanchez, Psychology (2015)**  
B.A. Duke University; M.A., Ph.D. University of Notre
- Uvaldo M. Martinez, Counselor (1999)**  
A.A. Palomar Community College; B.B.A., M.A. National University
- Molly McCloy, Writing (2009)**  
B.A. Evergreen State College; M.A. Northern Arizona University;  
M.F.A. The New School
- Yolanda C. McCoy-Stokes, Nursing (2012)**  
B.S., M.S. Grand Canyon University
- Dr. MaryKris McIlwaine, Sociology (2002)**  
B.S. Indiana University; M.A., Ph.D. University of Arizona
- Barbara McLaughlin, Art (2002)**  
B.F.A. School of the Art Institute of Chicago; M.F.A. Northern Illinois  
University
- Christina McNearney, Art (2001)**  
B.F.A., M.F.A. University of Arizona
- Jonathan Meair, Mathematics (2014)**  
B.S. Rensselaer Polytechnic Institute; M.S. University of Arizona
- Dr. Gary E. Mechler, Astronomy (1984)**  
B.S. University of Pittsburgh; M.S., Ph.D. Case Western Reserve  
University
- Kirk D. Mehtlan, Mathematics (2002)**  
B.A. Shippensburg University; M.Phil. University of Arizona
- Dr. Jose Maria Menendez, Mathematics (2011)**  
B.S. Louisiana State University; M.S., Ph.D. Virginia Polytechnic  
Institute and State University
- Sky G. Merten, Nursing (2015)**  
A.A.S; Pima Community College; B.A. University of Arizona; M.S.  
Grand Canyon University
- Dr. Karie Meyers, Physics (2006)**  
B.A. Occidental College; M.S., Ph.D. University of Colorado
- Jeffrey Miller, Respiratory Therapy (2009)**  
B.A. Northern Arizona University
- John A. Miller, Business (1999)**  
B.S. University of Missouri; M.B.A. Florida State University;  
J.D. Widener University of Law
- Patricia Miller, Computer Software Applications (2003)**  
Microsoft Office User Special (MOUS) Certifications at Expert Level  
for Word, Excel, PowerPoint and Access
- Tommie R. Miller, Social Services (1989)**  
B.A. Ohio State University; M.A., M.C.P. University of Cincinnati;  
M.S.W. Arizona State University
- Dr. Josie Milliken, Writing (2009)**  
B.A. Western Washington University; M.F.A. Arizona State  
University; Ph.D. University of Utah
- Dr. Mary Minke, Mathematics (2013)**  
B.S. Colorado School of Mines; M.S., Ph.D. University of Arizona
- Dr. Mark S. Moellenhoff, Mathematics (2012)**  
B.S., M.S. University of Missouri, Rolla; Ph.D. University of Alabama
- Richard J. Montano, Counselor (2015)**  
B.S.Ed. University of Arizona' M.Ed Northern Arizona University
- Becky J. Moore, Librarian (1972)**  
B.A.Ed., M.Ed. University of Arizona
- David A. Morales, Mathematics (2011)**  
B.S., M.S. University of Arizona
- Rosa Morales, Social Services (2009)**  
B.S.W. University of Texas, El Paso; M.S.W. University of  
California, Los Angeles
- Dr. Frank S. Morris, Administration of Justice Studies (2006)**  
A.A. Phoenix College; B.S. Grand Canyon University; M.Ed., Ed.D.  
Northern Arizona University
- Deborah Morrison, Reading (2002)**  
B.A.Ed., M.A. University of Arizona
- Eric Morrison, Reading (1995)**  
A.A. Cabrillo Community College; B.A., M.S. California State  
University-Sacramento; M.A. University of Arizona
- Dr. Randal H. Munsen, History (2004)**  
B.S. Minnesota State University; B.A., B.S., M.S. Mankato State  
University; M.A. Indiana University; Ed.D. University of Arizona
- Kathleen A. Munter, Accounting (2005)**  
B.A. Luther College; M.B.A. Northern Illinois University; Ed.S.  
Arkansas State University
- Timothy G. Murphy, Writing (2012)**  
B.A., M.A. University of Massachusetts
- Dr. Padma Nair, Chemistry (2008)**  
B.S. Rani Durgavati Vishwaydialaya; M.S., Ph.D. University of  
Missouri
- Dr. Mark A. Nelson, Music (2000)**  
B.A. Point Loma Nazarene University; L.T.C.L. Trinity College of  
Music; M.Ed. University of Vermont; M.M., D.M.A. Arizona State  
University
- Dr. Jeffrey P. Neubauer, Psychology (1999)**  
M.S. University of Oregon; M.S. Western Washington University;  
Ph.D. University of Wyoming
- Dr. Jonathan Ng, Music (2015)**  
M.Mus. Rider University; D.Mus. Indiana University - Bloomington.
- Dr. Bernard Ngovo, Reading (1996)**  
B.S.Ed. Cuttington University College; M.S.Ed. State University of  
New York-Albany; M.A., M.S.Ed., Ed.D. Northern Illinois University-  
DeKalb
- Michael J. Nolan, Art (2012)**  
B.F.A., M.F.A. University of Arizona
- Catherine M. O'Brien, Radiologic Technology (1998)**  
A.S. Moorepark College; B.S. St. Joseph's College; A.R.R.T. American  
Registry of Radiologic Technology; R.T.(M)(CV) Registered  
Technologist
- Sarah O'Hara, Writing (1999)**  
B.S., M.A. California State University
- Kelly O'Keefe, Health Information Technology (2014)**  
B.S., M.S. Western Illinois University;
- Dr. Steven Olson, Mathematics (2009)**  
B.A. Concordia College; Ph.D. University of Arizona

**James G. Osborn, Engineering and Mathematics (1999)**  
B.S.Ed., B.S.M.E. University of Michigan; M.S. University of Idaho

**Inoka Otero, Mathematics (2003)**  
B.A., M.S. University of Arizona

**Bardo D. Padilla, Spanish (2004)**  
A.A. Arizona Western College; B.A., M.A. University of Arizona

**Dr. Michael Parker, Humanities (2010)**  
B.A., M.A. Northern Arizona University; Ph.D. University of Arizona

**Reinhard Pawlicki, Digital Arts (2008)**  
B.S. Christian Albrechts University; M.Ed. Northern Arizona University

**Dr. Maria Pereira, Astronomy and Physics (2014)**  
B.S. Imperial College of Science, Technology and Medicine (United Kingdom); M.S. University of Hawaii at Manoa; M.Phil., Ph.D. Columbia University

**Eileen P. Perry Schwartz, Music (1981)**  
B.M., M.M. University of Arizona

**Taralynn P. Petrites, Sign Language (2004)**  
B.A. University of Arizona

**Laura A. Pieslewicz, Emergency Medical Technology (2015)**  
B.S. Kaplan University

**Dr. Diann R. Porter, Mathematics (2006)**  
B.A., M.S., D.A. University of Illinois at Chicago

**Susan M. Pritchett, Computer Aided Drafting (2001)**  
A.A.S. Pima Community College; A.A.S. Glendale Community College

**Dr. Caroline Pyevich, Psychology (2008)**  
B.A. Illinois Wesleyan University; M.A., Ph.D. University of Tulsa

**Dr. Michael Radloff, Education (2009)**  
B.S. Southern Illinois University; M.A. Chapman University; Ph.D. Capella University

**Wright N. Randolph Jr., Emergency Medical Technology (2006)**  
A.G.S., A.A. Arizona Western College; Basic EMT Certificate, Paramedic Certificate Pima Community College

**Dr. Liz Rangel, Spanish (2009)**  
B.A., M.A., Ph.D. University of Arizona

**David Raymond, Aviation Technology (2008)**  
Technical Certificate, Pima Community College; B.S., M.S. Embry-Riddle Aeronautical University

**Dr. Dianna L. Repp, Anthropology (2008)**  
B.A. University of Arizona; M.A., Ph.D. Arizona State University

**Renee Richard, Accounting (2013)**  
A.G.S., A.A.S. Pima Community College; B.S., M.S. University of Arizona

**Donna L. Richards, Dental Hygiene (2010)**  
A.A.S. Union County College; B.S. The University of Medicine and Dentistry of New Jersey; M.Ed. The Pennsylvania State University

**Theresa M. Riel, Mathematics (1996)**  
B.A., M.A. University of Arizona

**Dr. Nahal Rodieck, Writing (2010)**  
B.A., M.A., Ph.D. University of Arizona

**Monique A. Rodriguez, Librarian (2012)**  
B.A., M.A. University of Arizona

**Elizabeth P. Rollins, Writing (2012)**  
B.A. Washington College; M.F.A. Goddard College

**Anne Marie Rosales, Medical Laboratory Technician (2012)**  
B.S. University of Arizona

**Eric Ross, Aviation Technology (2009)**  
Airframe Mechanic license, Powerplant Mechanic license Federal Aviation Administration

**Dr. Carin Rubenstein, Psychology (2013)**  
B.A. Smith College; M.A., Ph.D. New York University

**Medhi Sadatmousavi, Mathematics (1988)**  
B.S., M.S. University of Arizona

**Dr. Steven J. Salmoni, Writing (2005)**  
B.A. Amherst College; M.A., Ph.D. State University of New York-Stony Brook

**Dr. Maureen Salzer, Writing (2010)**  
B.A. State University of New York at Plattsburgh; M.A. Northeastern University; Ph.D. University of Arizona

**Michael Sampogna, Physics (2008)**  
B.S. City College New York; M.S., M.S. Polytechnic University

**Yvonne M. Sandoval, Mathematics (1992)**  
B.S. University of Southern Colorado; M.A. University of Arizona

**Erich C. Saphir, Political Science (1997)**  
B.A. University of Delaware; M.A. Fordham University

**Dr. Nancy Schmidt, Biology (2003)**  
A.B. Colgate University; M.S. University of Arizona; Ph.D. University of South Florida

**Russell W. Schmidt, Respiratory Therapy (2013)**  
A.S. Pima Community College; B.S. University of Phoenix

**Susi Schmidt, Pharmacy Technology (2009)**  
B.S. University of Arizona

**Teddi G. Schnurr, Early Childhood Education (2013)**  
B.A. University of California - Irvine; M.S.W. University of Michigan; M.S. Northern Arizona University

**Duke G. Schoonmaker, Biology (1992)**  
B.S. Northern Arizona University

**Seth Schutte, Fitness and Sports Science (2015)**  
B.S., M.S. Montana Tech of the University of Montana

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A.S. Pima Community College; B.S. Anatomy; D.C. Parker College

**Kyley F. Segers, Mathematics (2012)**  
B.A., M.A.T. University of Florida

**Dr. Thomas Selegue, Chemistry (2002)**  
B.S. Bowling Green State University; Ph.D. University of Illinois

**Dr. Leta Sharp, Writing (2009)**  
B.A. McGill University; M.A. Northern Arizona University; Ph.D. University of Arizona

**Trina A. Shartsis, Chemistry (2013)**  
B.S. Idaho State University; M.S. University of Nevada -Reno

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M.S. Azerbaijan Institute of Oil and Chemistry; Ph.D. Moscow Institute of Oil and Gas

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B.A., M.S. University of Arizona; M.S.W. Arizona State University

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