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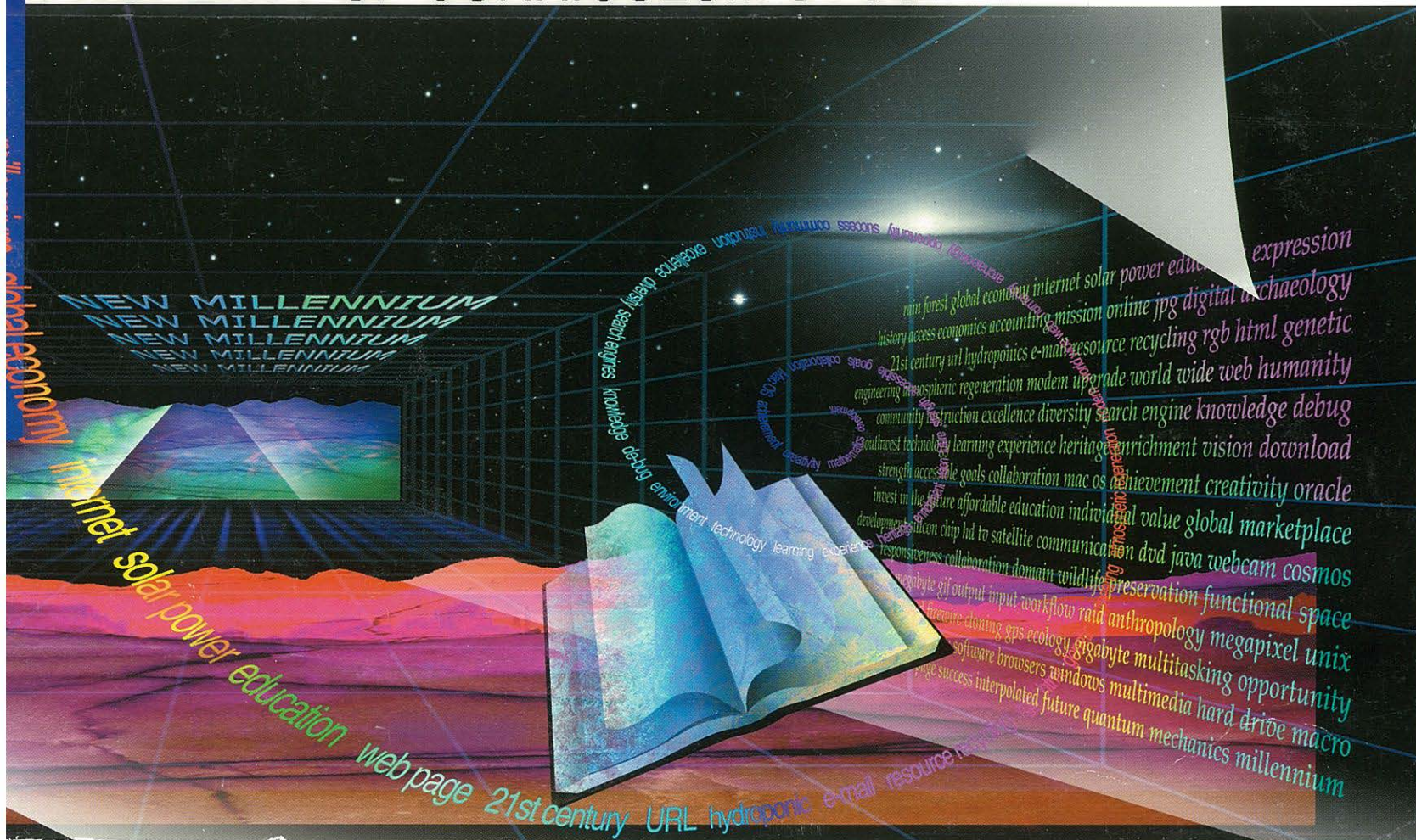
# PimaCommunityCollegeCatalog



1999/2000

PimaCountyCommunityCollegeDistrict

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# Pima Community College Catalog 1999/2000

**Pima County Community College District**

4905 East Broadway Blvd.

Tucson, AZ 85709-1010

(520) 206-4500



## **Catalog replacement cost: \$1.50**

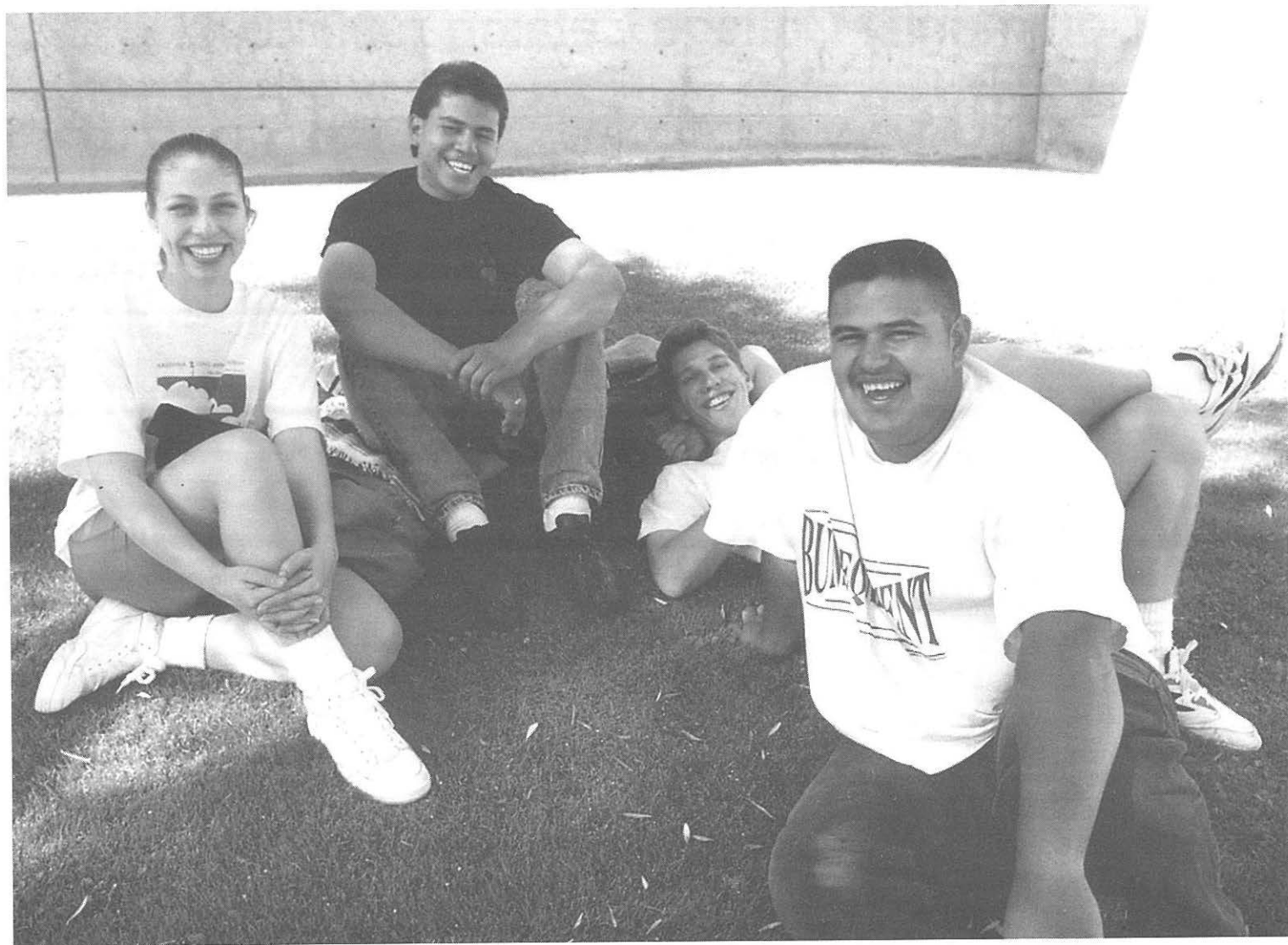
This catalog was prepared on the basis of the best information available at the time. All information—including statements on tuition, fees, course offerings, admission, and graduation requirements—is subject to change without notice, obligation, or liability.

Published: May 1999

**Pima Community College is an equal opportunity, affirmative action employer and educational institution committed to excellence through diversity. See page 422 for more information.**

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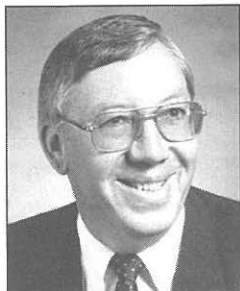
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*Make correction to catalog (marked)*





## Message from the Chancellor

The catalog you are looking at holds ingredients you will use to create your future. Whether you are just beginning your education, pursuing a training course leading to a job, or adding skills to enhance your career, you will find the very best ingredients in this catalog.

Pima offers you not only first rate instruction and a huge range of courses and programs, but we care that you succeed. From your first contact with Pima, you'll know we are partners in your success. We'll listen to your educational goals and help you plot a course to get there. We are working to have classes available to you when you need them and where you need them. You can take classes over television or the Internet, on the weekends, in the evening or at your leisure in learning labs. And, if you have a disability, Pima has technological aids to help you leap your limitations.

And we're growing! Construction of new buildings or renovations will be taking place on every campus this year. We know it will cause some inconvenience, but we won't let it interrupt your education. And when we finish, our campuses will be redesigned to further support your success. All student services will be in one place. You'll have places to hang out. The campuses will have edges, real entrances, and better parking.

I wish you success this year, and in the years to come. Most importantly, you'll enjoy an outstanding faculty, staff, and administration dedicated to assisting you in reaching your goal.

Cordially,

A handwritten signature in black ink, appearing to read "R. Jensen".

Dr. Robert Jensen  
Chancellor

## Welcome to Pima Community College

Pima Community College is a two-year institution that serves the residents of Pima and Santa Cruz Counties. Each year, the College opens its doors to more than 53,000 credit and noncredit students. Pima has five campuses that offer university transfer programs, occupational and developmental education, and special interest courses. Classes, workshops, and seminars are held at more than 145 off-campus locations in Tucson, Davis-Monthan Air Force Base, Green Valley, Nogales, and Sells.

## Bienvenidos a Pima Community College

Pima Community College es una institución de educación superior, que presta sus servicios a la comunidad de los condados de Pima y Santa Cruz. Cada año el colegio asiste a más de 53,000 estudiantes en clases de crédito a nivel colegial y clases de interés para la comunidad. Pima cuenta con cinco planteles que ofrecen programas de estudios que son acreditados por las universidades. También cuenta con programas técnicos, programas de conocimientos básicos y clases de interés especial. Además de los cinco planteles, Pima cuenta con más de 145 localidades en Tucson, Green Valley y Nogales en las cuales se ofrecen clases, seminarios y talleres.

El colegio ofrece clases cuyo contexto es presentado en inglés y español. Además cuenta con cursos bilingües los cuales permiten que el estudiante mejore el inglés durante su transcurso. Para más información acerca de Pima Community College y de la información en este catálogo, por favor comuníquese con la oficina de International Student Admissions, Centro Estudiantil, West Campus, número 234, o llame al (520) 206-6732.

# How This Catalog Can Be Useful to You

As you pursue your goal of higher education, this catalog can be a valuable tool in answering your questions and helping you while you are at Pima Community College. The *Pima Community College Catalog* is organized to guide you through each step of your college career at this institution:

- **Academic Calendar**—provides essential dates for the upcoming school year, such as when classes start and end and holidays.
- **The College**—describes the institution, its philosophy, history, and an overview of its five campuses (with maps).
- **Admissions, Registration, Records, and Graduation**—provides information on applying for admittance, registering for courses, student records, and graduation requirements. For assistance with the material in this section, contact an advisor or counselor at any PCC campus Advising and Counseling Center.
- **Costs and Payments**—lists how much it costs to attend PCC (as determined by the tuition and fees for the number of credit hours for which you are registered). It also tells how you pay and explains the College's refund policies for credit and noncredit classes.
- **Financial Assistance**—provides specific information on the types of financial aid available through the College and outside sources.
- **Student Services**—describes the services available to you at PCC once you have been admitted and registered, all designed to help you be a successful student.
- **Earning a Degree or a Certificate**—discusses what is meant by a "degree," a "certificate," and a "program." It also explains the concept of "General Education," and how you must complete the General Education requirements as part of your program of study (major).
- **Educational Options**—explains what options and special opportunities are available to you. In an effort to help all students reach their goals, Pima Community College provides alternative-style and accelerated classes, not just the traditional 16-week classes.
- **Student Activities and Life**—describes student athletics and sports, leadership, and publications and gives information on transportation, housing, health services, and the Alumni Association.
- **Educational Programs, Degrees, and Certificates**—contains all the degrees and certificates offered at Pima. Under each area of interest, which are listed alphabetically, there is a display of each degree and certificate. Each display identifies the courses you are required to complete successfully to earn that degree or certificate.

- **Educational Courses**—lists all the courses offered by PCC, grouped under areas of interest (which are in alphabetical order). The course prefix and number, the title, a brief description of what the course covers, and any requirements you must complete before taking the course are also included. At the beginning of this section there is a chart showing all the areas of interest and the corresponding course prefix (such as ANT for anthropology).
- **Selected Policies, Governance, and Faculty**—relates the College's Equal Employment Opportunity/Affirmative Action, Sexual Harassment, and Americans with Disabilities Act policies. In addition, this section also lists the members of the state and district governing boards, the administration of Pima Community College, and all full-time faculty.

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.

## Where to Find Key Information

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# Academic Calendar

## Fall Semester 1999

Faculty advising begins	Aug. 18 - 24
All College In-Service Day	
(College open - reduced staffing)	Aug. 18
Late registration	Aug. 16 - 24*
<b>Fall classes start</b> (traditional semester)	Aug. 25*
First 8-week session begins	Aug. 25†
Drop/add (traditional-length courses)	Aug. 25 - 31
Labor Day holiday (College closed)	Sep. 6
December graduation applications due	Oct. 1
Census Date, 45th day	Oct. 8
Second 8-week session begins	Oct. 20†
Official withdrawal deadline (traditional-length courses)	Nov. 9
Veterans Day holiday (College closed)	Nov. 11
Thanksgiving Day holiday (College closed)	Nov. 25 - 28
Evaluation/assessment/exam week	Dec. 13 - 17
<b>Fall semester ends</b>	Dec. 17
Final grades due	Dec. 17§
Winter recess (students/faculty)	Dec. 20 - Jan. 9
Holiday break (College closed)	Dec. 25 - Jan. 2

## Holiday Session 1999/2000

<b>Classes begin</b>	Dec. 20†
Holiday break (no classes)	Dec. 24 - 25
Classes resume	Dec. 27
Holiday break (no classes)	Dec. 31 - Jan. 2
Classes resume	Jan. 3
<b>Classes end</b>	Jan. 11
Final grades due	Jan. 11

## Spring Semester 2000

Faculty advising begins	Jan. 10 - 13
Late registration	Jan. 10 - 14
Faculty Development Day	Jan. 14
Martin Luther King, Jr., Day holiday (College closed)	Jan. 17
<b>Spring classes start</b> (traditional semester)	Jan. 18*
First 8-week session begins	Jan. 18†
Drop/add (traditional-length courses)	Jan. 18 - 24
May graduation applications due	Feb. 11
Rodeo Days holiday (College closed)	Feb. 24 - 25**

Census Date, 45th day	Mar. 2
Spring holiday (no classes)	Mar. 13 - 19
Second 8-week session begins	Mar. 21†
Official withdrawal deadline (traditional-length courses)	Apr. 6
Evaluation/assessment/exam week	May 10 - 16
<b>Spring semester ends</b>	May 16
Final grades due	May 17§
Graduation	May 17

## Summer Sessions 2000

### Session A

Classes begin	May 22
Drop/add	May 22 - 23
Memorial Day holiday (College closed)	May 29
Classes end	
5-week session	Jun. 26

### Session B

Independence Day holiday (College closed)	Jul. 4
Classes begin	Jul. 5
Drop/add	Jul. 5 - 6
Classes end	
5-week session	Aug. 9

### Session C

Classes begin	May 22
Drop/add	May 22 - 23
Memorial Day holiday (College closed)	May 29
Independence Day holiday (College closed)	Jul. 4
Classes end	
8-week session	Jul. 17
10-week session	Jul. 31

\* Registration continues throughout the semester in short-term, accelerated, and open-entry classes.

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

§ If necessary, faculty may have an additional 2 working days to complete grade calculation with a due date of not later than Dec. 22 for fall semester and not later than May 19 for spring semester.

\*\* College open for classes/activities Feb. 26 - 27.

## The College



## Accreditation

Pima Community College is accredited by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools, which can be contacted at their Web site address, [www.ncacihe.org](http://www.ncacihe.org); by telephone at (800) 621-7440; by fax at (312) 263-7462; or by mail at 30 N. LaSalle Street, Suite 2400, Chicago, IL 60602-2504. Specialized agencies, each recognized by the U.S. Department of Education, have also accredited or approved individual study programs in nursing, radiologic technology, dental hygiene education, dental laboratory technology, dental assisting education, landscape technician, legal assistant, and respiratory therapy.

## Mission Statement

Pima Community College welcomes all who seek to increase their knowledge, gain skills, enrich their lives, and benefit from the diverse learning opportunities it offers.

The College provides quality, comprehensive, affordable higher education for individual student and community needs, and recognizes that its constituents benefit from global awareness.

The College assesses the needs of its communities and responds quickly to provide programs and services. It offers both traditional and alternative approaches to learning, emphasizes teaching excellence, assesses student learning, and builds collaborative partnerships. The College promotes access for students through multiple sites and interactive technologies.

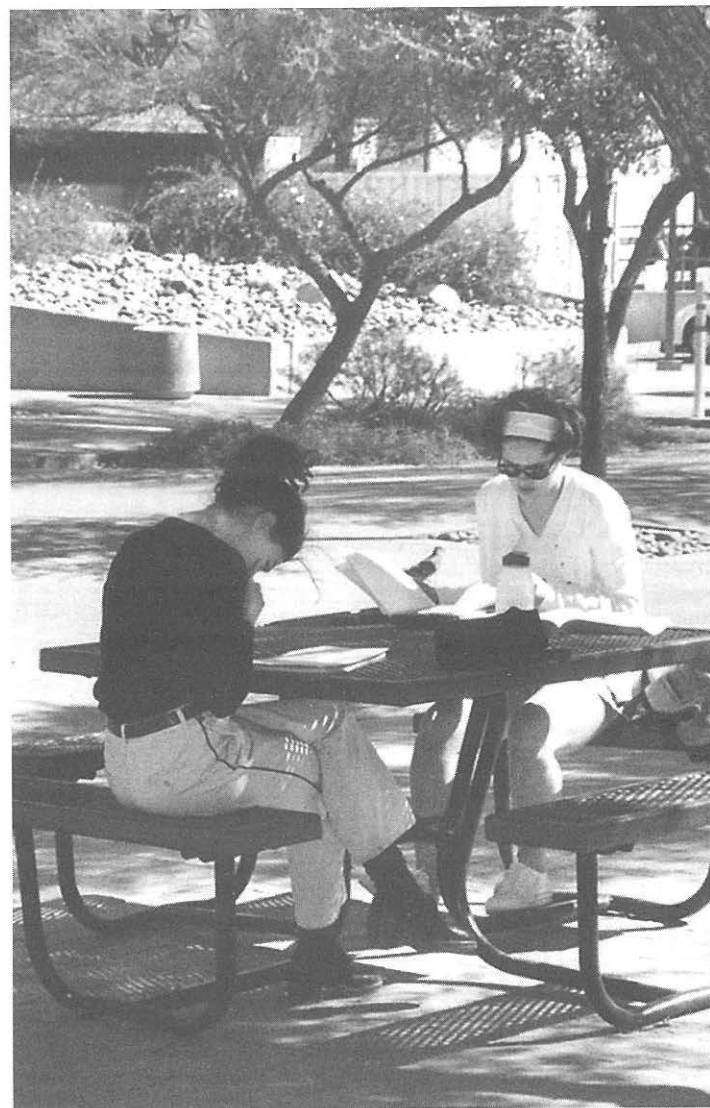
## Values Statement

Pima Community College reflects the values and aspirations of the greater community which we serve.

### *We believe in—*

**Vision and Leadership.** We are committed to a positive vision of the future, adapting responsibly to changing individual and community needs. We are leaders in promoting the value of education to improve the quality of life and to participate in the global marketplace.

**Quality Learning in a Caring Environment.** Our special strength lies in inspiring student confidence and learning. We believe that student achievement and success are increased by providing options for students, nurturing the whole person, and continuously improving instruction and services.



**Diversity.** We encourage individual expression and we respect differences in culture and language. We honor the environmental heritage of the Southwest and the cultural traditions of the peoples of the world.

**Responsiveness and Collaboration.** We reach out to understand our community, to share resources, and to provide access for students. We value ongoing communication with constituents. We believe in investing in the future of our students and employees and providing appropriate facilities and technology. We hold ourselves accountable for our stated values and the public trust placed in us.

## College Purposes

The College fulfills its Mission through the following purposes:

### General Education:

to provide a core of learning in all associate degree and certificate programs which promotes good citizenship and lifelong learning.

### Occupational and Professional Education:

to educate and train students for the requirements and opportunities of the changing local and global economies.

### Transfer Education:

to prepare students to transfer to and succeed in other institutions of higher education.

### Developmental Education:

to assist students in learning basic skills to succeed in college work and in life.

### Community Education:

to offer organizations and individuals diverse education, personal enrichment, and training opportunities to upgrade and enhance their skills and knowledge.

### Student Development and Support Services:

to assist students in realizing their full potential through counseling, career planning, advising, assessment, student activities, and specialized educational services.

### Business and Economic Development:

to assist the economic development of the greater community through collaborative planning, workforce development programs, continuing education and training, and technical assistance to businesses.

## Mission Indicators of Success

1. Pima Community College students and employees will reflect the diversity in the community.
2. Students will find the College's programs and services accessible and competitively affordable among Arizona community colleges.
3. College courses and programs will meet the needs of students, employers, and its educational partners.
4. Employers and educational partners will find that the College adapts quickly and responsibly to changing education and workplace requirements.
5. Students will show persistence in reaching their educational goals.
6. Community constituents will share the College's perception of its mission and progress toward achieving its mission.
7. The College will identify and implement ways to meet the needs of the unserved, underserved, and non-returning students in its service area.
8. The College will meet the expectation of employers and its educational partners for collaboration, articulation, and sharing resources.
9. Students completing coursework will have the knowledge, skills, and values to compete successfully in continuing higher education and local and global markets.
10. The College will provide effective professional development programs.

The College will evaluate and report to the community its overall institutional effectiveness.

## 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.*

*(Adopted by the College Board of Governors, March 11, 1992)*

## Implementation

The College takes a number of integrated steps to plan and improve its programs and services.

- It annually measures its overall mission performance by reporting to the community on ten *Indicators of Success*.



- The quality of its academic programs and services is assessed each year in a program-by-program evaluation cycle.
- It applies a comprehensive set of measures to assess student academic achievement in all facets of student learning.
- The performance of all employees and its Board of Governors is assessed on a regular basis.

Each of these steps is supported by timely surveys and research studies of students, College employees, area employers and taxpayers, and other education partner institutions.

## Historic Profile

In 1966 the citizens of Pima County, Arizona, approved by a large margin the formation of a junior college district. As a result of this vote, Pima College was established.

The county superintendent of schools then appointed a five-member governing board which proceeded to lay the groundwork for the new 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. The voters also approved a \$5.9 million bond issue for the College. In 1969, construction on the first campus began on a 167-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 the unlikely quarters of a hangar at the Tucson International Airport. By January of 1971, students in all programs attended classes in the eleven buildings on the new Anklam Rd. campus, today's West Campus.

From these beginnings, Pima College grew and expanded its horizons. The first step occurred in 1972 when the board renamed the institution to better reflect its mission statement. It was now known as Pima Community College.

Two years later the College made its first physical expansion when it opened the Downtown Campus, located near Stone Ave. and Speedway Blvd. At 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 fifteen buildings.

In 1975 the College established the Community Campus to supplement

traditional on-campus education. Currently, this campus offers classes at over 145 sites throughout the communities of Tucson, Davis-Monthan Air Force Base, Green Valley, Marana, Nogales, and Sells. In addition, the Community Campus provides televised classes on local cable channels as well as via on-line computer. The Corporate and Community Education Offices at the Community Campus offers customized training for the business community, noncredit courses, and study tours. A new, larger Community Campus facility, the College's technology hub, opened in January of 1997 near St. Mary's Rd. and Interstate 10.

The College established the East Education Center in 1976. Five years later the center became the East Campus, located on a desert site east of Davis-Monthan Air Force Base, near Pantano and Irvington Roads. In the fall of 1989 the campus doubled in size with the construction of the student union and library.

The Education Center-South opened in 1986, and by 1994 had grown into the Desert Vista Campus, located near Interstate 19 and Valencia Rd. The campus also houses a workforce development unit known as the Center for Training and Development, formerly called the Skill Center. In 1973, Pima Community College became the local agency sponsor for the Skill Center, which had been established ten years earlier. In 1979, the College officially recognized the center as part of the College organization.

In 1995, the voters of Pima County approved the use of taxpayer-supported bonds to finance much-needed expansion and important facility and technology improvements throughout the Pima County Community College District. In 1998, the college subsequently opened the Northwest Community Learning Center, as a forerunner to the establishment of a comprehensive campus in the northwest sector of the county.

For many of its 30 years, Pima Community College has ranked among the five largest multi-campus community colleges in the nation, enrolling more than 50,000 students annually.



# Pima County Community College District

## District Central Office

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

## Campuses

### Community Campus

401 North Bonita Ave.  
Tucson, AZ 85709-5000  
(520) 206-3933

### Desert Vista Campus

5901 South Calle Santa Cruz  
Tucson, AZ 85709-6000  
(520) 206-5000

### Downtown Campus

1255 North Stone Ave.  
Tucson, AZ 85709-3000  
(520) 206-6135

### East Campus

8181 East Irvington Rd.  
Tucson, AZ 85709-4000  
(520) 206-7000

### West Campus

2202 West Anklam Rd.  
Tucson, AZ 85709-0001  
(520) 206-6600

## Educational Centers and Offices

### Alumni Association (See District Central Office)

4905C East Broadway Blvd.  
Tucson, AZ 85709-1330  
(520) 206-4977

### Arizona State Environmental Technology

Training Center (ASETT) (See East Campus)  
8181 East Irvington Rd.  
Tucson, AZ 85709-4000  
(520) 206-7888

### Aviation Technology Center

1668 South Research Loop  
Tucson, AZ 85709-3085  
(520) 206-6186

### Center for the Arts (See West Campus)

2202 West Anklam Rd.  
Tucson, AZ 85709-0295  
(520) 206-6986

### Center for Training and Development (See Desert Vista Campus)

5901 South Calle Santa Cruz  
Tucson, AZ 85709-6350  
(520) 206-5100

### Community Education (See Community Campus)

401 North Bonita Ave.  
Tucson, AZ 85709-5505  
(520) 206-6569

### Corporate Education (See Community Campus)

401 North Bonita Ave.  
Tucson, AZ 85709-5500  
(520) 206-6569

### Davis-Monthan Air Force Base

355 MSS/DPE  
5260 East Granite St.  
Tucson, AZ 85707-3009  
(520) 206-6174

### Green Valley Education Center (Not pictured on the map)

Green Valley Mall, South Courtyard, Suite 13  
Green Valley, AZ 85614-2629  
(520) 625-5063

### Nogales/Santa Cruz Education Center (Not pictured on the map)

125 East Madison St.  
Nogales, AZ 85621  
(520) 206-6312 and (520) 287-5583

### PCC Foundation Office (See District Central Office)

4905C East Broadway Blvd.  
Tucson, AZ 85709-1320  
(520) 206-4646

### Small Business Development & Training Center (See District Central Office)

4905A East Broadway Blvd.  
Tucson, AZ 85709-1260  
(520) 206-4906

### Northwest Community Learning Center

Bashas' Cortaro Plaza  
8310 N. Thornydale Road, Suite 140  
Tucson, AZ 85709-5200  
(520) 260-2000

A detailed map of the University of Arizona campus and surrounding areas. The map shows major roads like Highway 10, Highway 19, and Highway 805. Key locations marked include Northwest Community Learning Center, Downtown Campus, West Campus, Community Campus, Desert Vista Campus, East Campus, Aviation Technology Center, Davis Monthan AFB, and District Central Office. The map also shows the Tucson International Airport and various local streets and landmarks.







## Community Campus

Serving students since 1975, the Community Campus conducts credit and noncredit classes at its campus location (401 N. Bonita Avenue) and in more than 145 facilities throughout southern Arizona, including the Northwest Learning Center (8310 N. Thornydale), Davis-Monthan Air Force Base, and at various public facilities in greater Tucson, Green Valley, Nogales, Santa Cruz, and Sells.

The Community Campus provides a wide range of courses developed to meet the diverse needs of the greater Tucson community as defined by its residents and local businesses. Customer-driven programs and classes are offered to nearly 30,000 persons every year. The Community Campus also develops and administers educational services in support of College district-wide educational programs and initiatives, and it delivers degrees in Associate of Arts (AA), Associate of Science (AS), Associate of General Studies (AGS), and Associate of Applied Science—Business and Industry Technology (AAS/BIT). AAS/BIT degree programs include a degree in Microsoft Certified Systems Engineer (MCSE) studies and a degree in Certified Novell Engineer (CNE) studies.

Community Campus services include development and delivery of programs in the following areas: Business and Industry Training (BIT) division services include corporate education and professional development classes coordinated through the Employee Development Institute (EDI), the Information Technology (IT) Institute, and the Small Business Development Center (SBDC). Specific BIT Division programs include Continuing Education for Health Professionals and Continuing Education for K-12 Educators. Career training services are provided by the Center for Training and Development. Adult basic education classes are coordinated by the Pima County Adult Education Division. Community education programs and services include senior and general interest classes, summer classes for K-12 students, workshops, seminars, and study tours throughout the Southwest, Mexico, and abroad. International business training exchanges are conducted through the International Training and Development Center.

The Community Campus administrative headquarters houses a registration and cashier center, an advising and counseling center, a learning resource and educational service center, a conference and training center, and administrative offices for the campus and its various divisions. The telecommunications wing houses the College district-wide interactive classroom system hub, broadcast-quality production facilities, and the telecourse distribution center. Also in this wing, the College has provided space to Northern Arizona University (NAU) for its interactive classroom and distribution control center for NAU distance learning operations in southern Arizona.

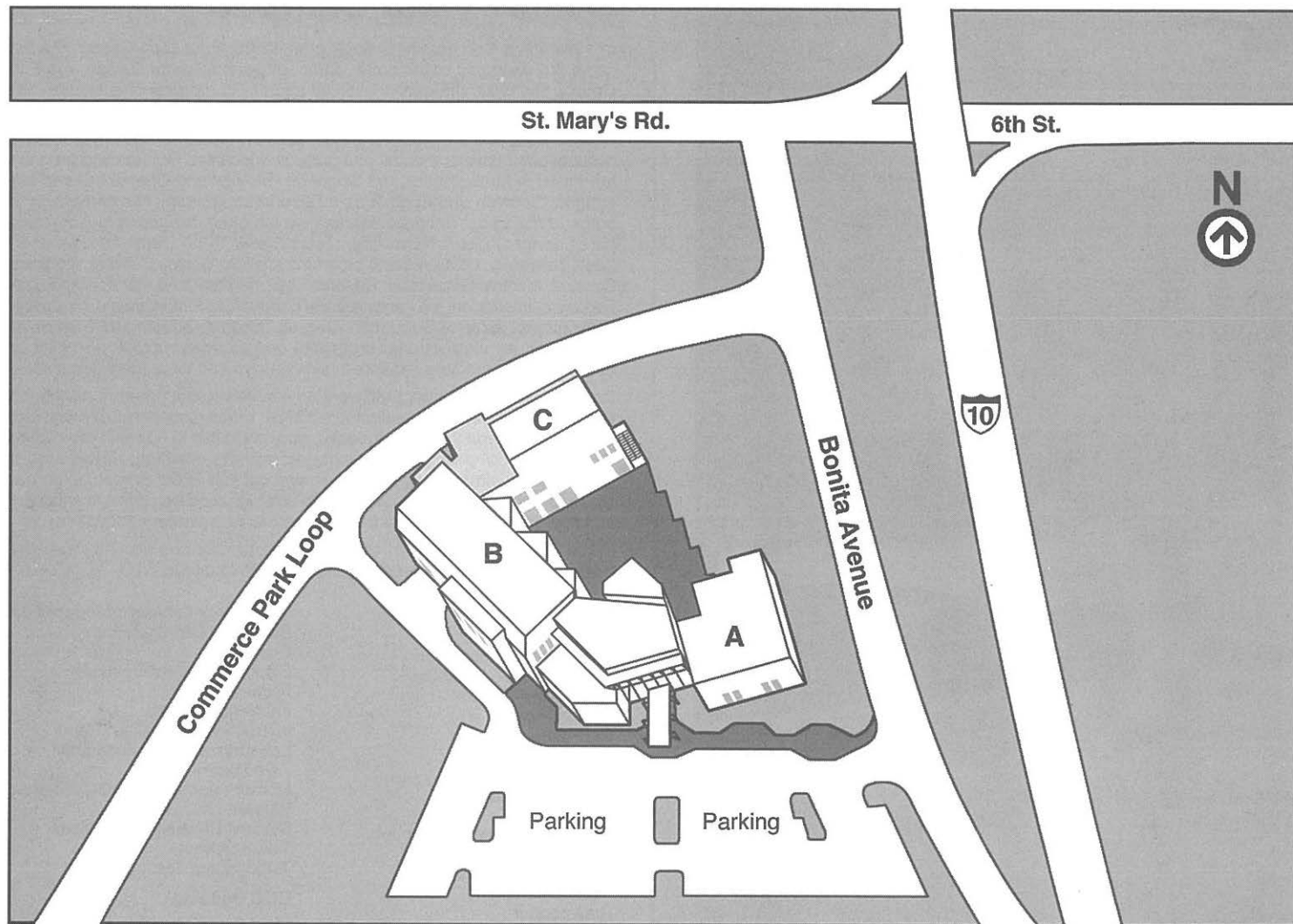
**Area A:**  
Conference and Training Center

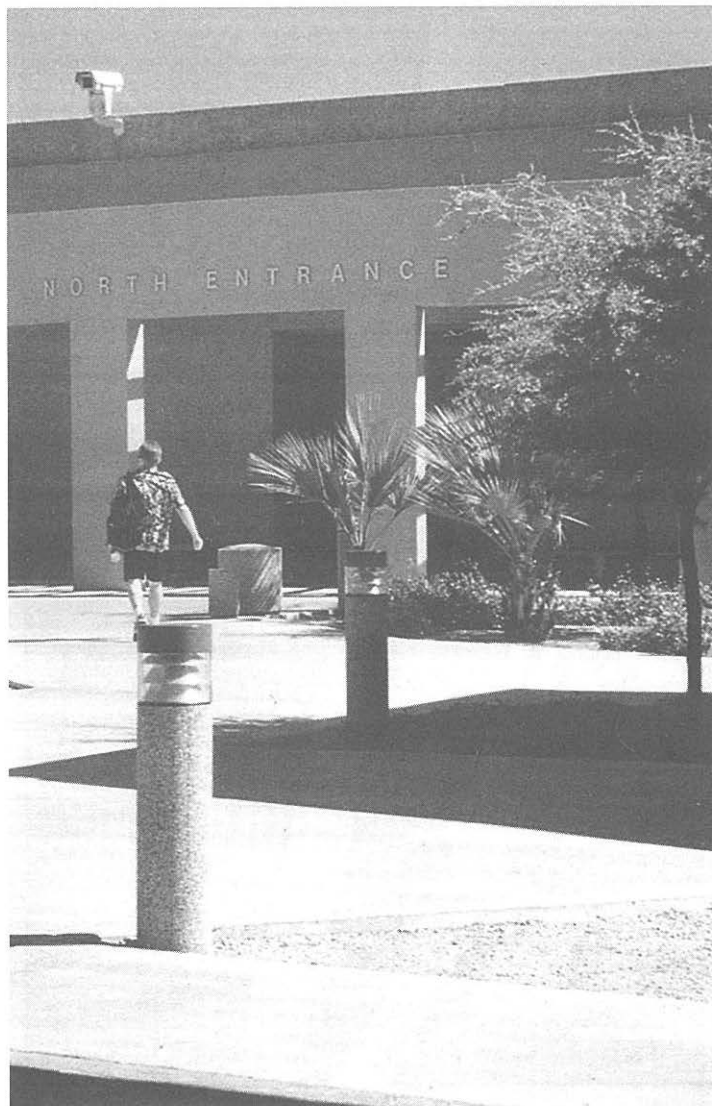
**Area B:**  
Administration  
Admissions and Registration  
Advising and Counseling  
Assessments  
Business and Industry Training  
Career Counseling  
Cashier  
Center for Instructional Design  
and Development  
Center for Training and  
Development  
Community Education  
Computer Commons/CBT Lab

Continuing Education for Health  
Professionals and K-12  
Educators

International Training and  
Development Center  
Learning Resource/Testing  
Center  
Pima County Adult Education  
Student Development  
Telecourse Resource Center

**Area C:**  
NAU Classrooms  
Telecommunications and  
Production Services  
Telecourse and Interactive  
Classroom Distribution Center





## Desert Vista Campus

In 1986 Pima Community College opened the Education Center-South to serve the residents of the south and southwest areas of Tucson and Pima County. By 1993, the center evolved into the comprehensive Desert Vista Campus, moving to its present location near Interstate 19 and Valencia Rd.

Desert Vista offers a wide range of courses, including university transfer, occupational, developmental, and general education. Outstanding programs are found in Mathematics and Sciences (Biology and Chemistry) and Languages (Spanish and English as a Second Language). The campus is the home of the Legal Services Institute, which offers programs in Court Support Services, Court Reporting, Court Clerk, Tribal Court Advocate, and Legal Secretary. Other notable programs are Flex (Office Careers, Computer Careers, Medical Secretarial, Records Management) and Mariachi and Ballet Folklorico. In addition, the campus is the home of the Pima Community College/University of Arizona Sequential Degree Program in Bilingual Elementary Education. All instructional programs and student support services are backed by a computing network of services geared for student success.

Desert Vista offers a noncredit workforce development program through the Center for Training and Development (CTD). It works cooperatively with community-based organizations, agencies, and employers to provide individualized year-round, open-entry/open-exit, job training certificate programs for immediate employment. The campus also houses Talent Search, a federally funded program which works with middle and high school students to encourage and support their successful transition into postsecondary education.

In the Fall 1998 semester, the Desert Vista Campus served more than 2,900 students, while more than 300 students attended CTD.

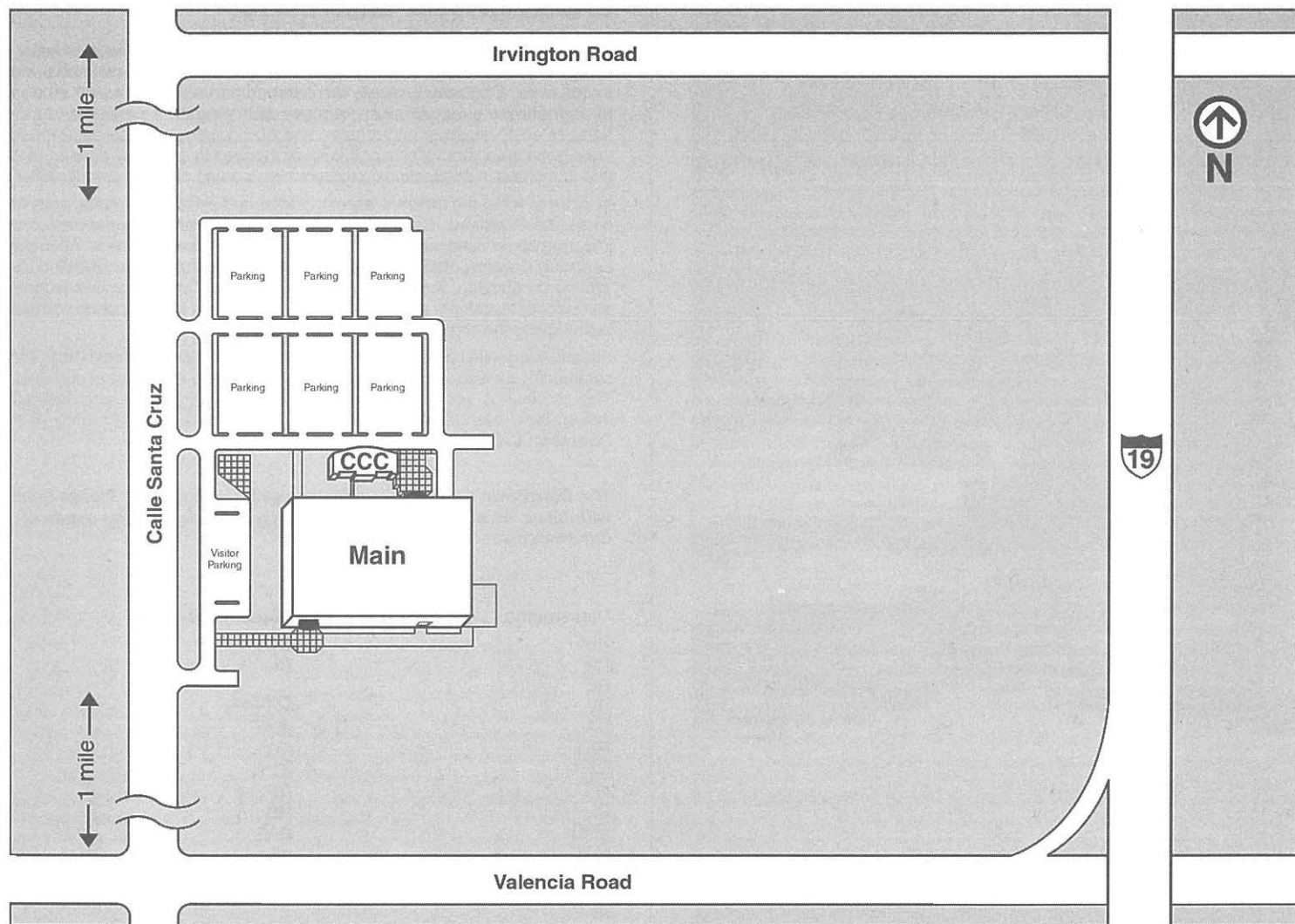
### Main Building

Administrative Offices  
Admissions/Registration  
Advising and Counseling  
Assessment Center  
Audio/Visual  
Bookstore  
Business Office  
Cafeteria  
Campus Police  
Cashier  
Career & Transfer Center/Job Placement  
Center for Training and Development  
Classrooms

Community Outreach/Financial Aid  
Computer Lab/Classroom  
Counseling  
Disabled Student Resources  
Faculty Offices  
Information Center  
Instructional Activities Center  
Laboratories for Biology and Chemistry  
Library/Learning Resource Center  
Student Life  
Student Development Offices  
Talent Search  
Tutoring and Testing Center

### CCC Building

Child Care Center





## Downtown Campus

Since its beginning in 1974, the Downtown Campus has offered a variety of opportunities for students to enhance their personal, academic, and professional lives. Centrally located, the campus serves over 14,000 students throughout the year, with 92% of those attending on a part-time basis. A balance of developmental, transfer, and occupational course offerings has created an enrollment that is both heavily involved in university transfer (41%) and immersed in occupational programming leading directly to work (30%).

In order to meet the different learning styles and scheduling needs of its students, the Downtown Campus has developed innovative ways of instruction, including supervised, individualized instruction with video lessons. Alternative Learning Centers offer self-paced learning in Mathematics, Reading, and Writing. In addition, the Multidiscipline Computer Center provides technical assistance to students and assists faculty who desire to incorporate computer learning into the classroom.

Almost every discipline at the Downtown Campus works closely with local community advisory groups to assure the quality and relevancy of curriculum. This continuous assessment process, coupled with capable and dedicated instructors, has created unique and exceptional programming at the Downtown Campus.

***The Downtown Campus is in the process of renovation. Please bear with us as we strive to match our campus structure to the needs of our students.***

### Classrooms

RB  
RC  
RE  
RV  
RA  
RA1  
CT  
WT  
CL  
ARC  
AWC  
AMC  
ATC  
AT

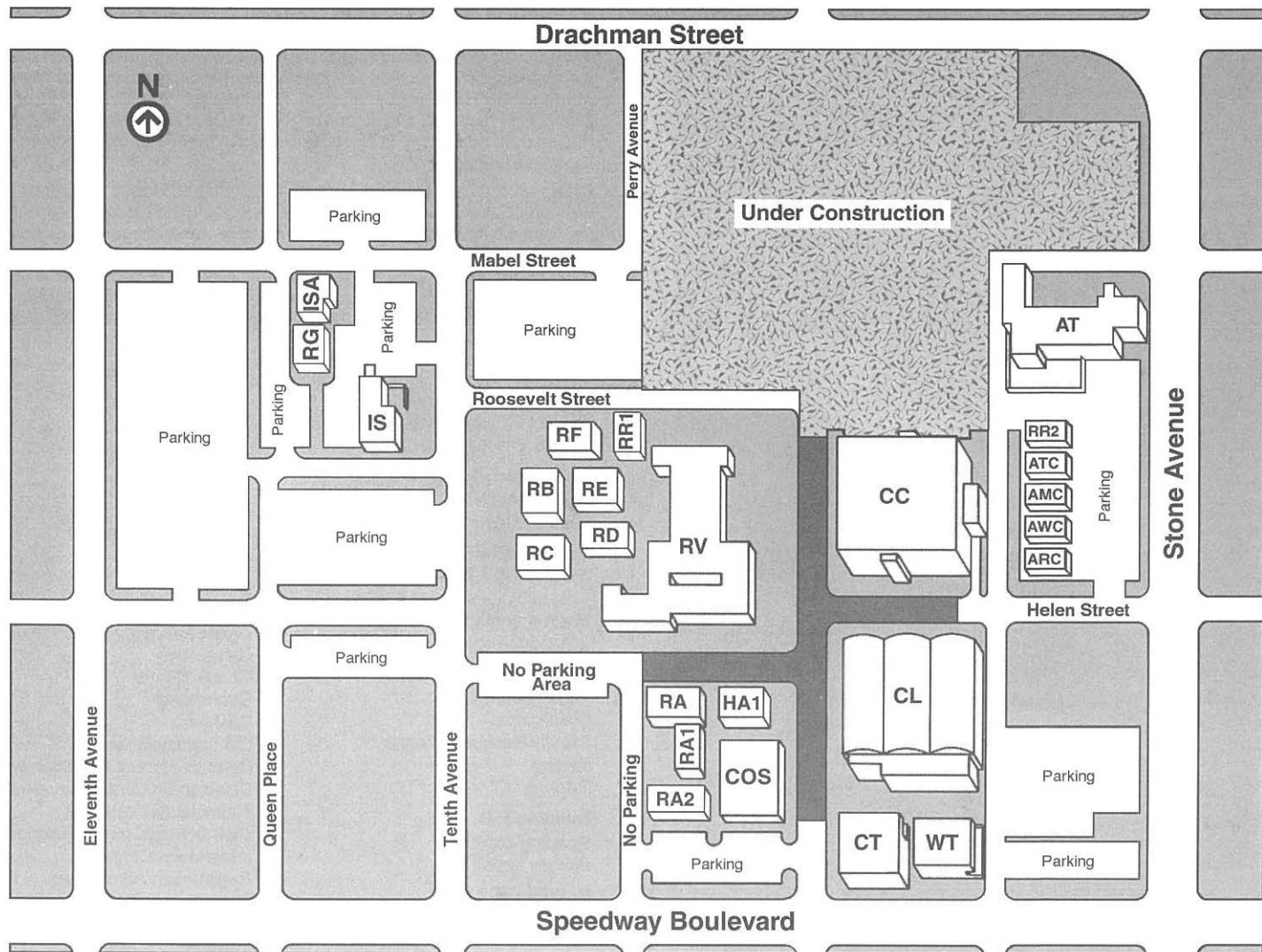
### Student Services

CC  
CL

### Offices

ISA  
RG  
IS  
RF  
RD  
RA2  
HA1  
COS







## East Campus

The East Campus offers general education, university transfer, and developmental courses, as well as selected occupational programs. The campus is home to the Emergency Medical Technology Program, the Pharmacy Technology Program, and the nationally acclaimed Environmental Technology Program. In addition, it is currently the only campus to offer courses in the Japanese language.

Sitting on sixty acres in the Pantano and Irvington Roads area, next to the Clements Center, the Fred Enke Golf Course, and the Lincoln Regional Park, the East Campus has a relaxed, comfortable atmosphere with its buildings clustered about several small patios. Facilities include classrooms, laboratories, a supplemental learning center, the library, the bookstore, a student activities area, and the Arizona State Environmental Technology Training Center (ASETT). In the fall of 1998, the campus served over 5,000 students.

### Building O

Administrative Offices  
Adjunct Faculty Office  
Faculty Offices

### Buildings E-1, E-2, E-3, E-6

Classrooms  
Laboratories

### Building E-4

Arizona State Environmental  
Technology Training Center  
Environmental Technology

### Building E-5

Art Gallery and Studios  
Audio/Visual  
Classrooms  
Faculty Resource Center  
Testing  
Tutoring

### Building E-6

Reading Labs  
Biology Labs

### Building M-1

Adjunct Faculty Service Center

### Buildings M-2, M-3

Classrooms

### Building M-4

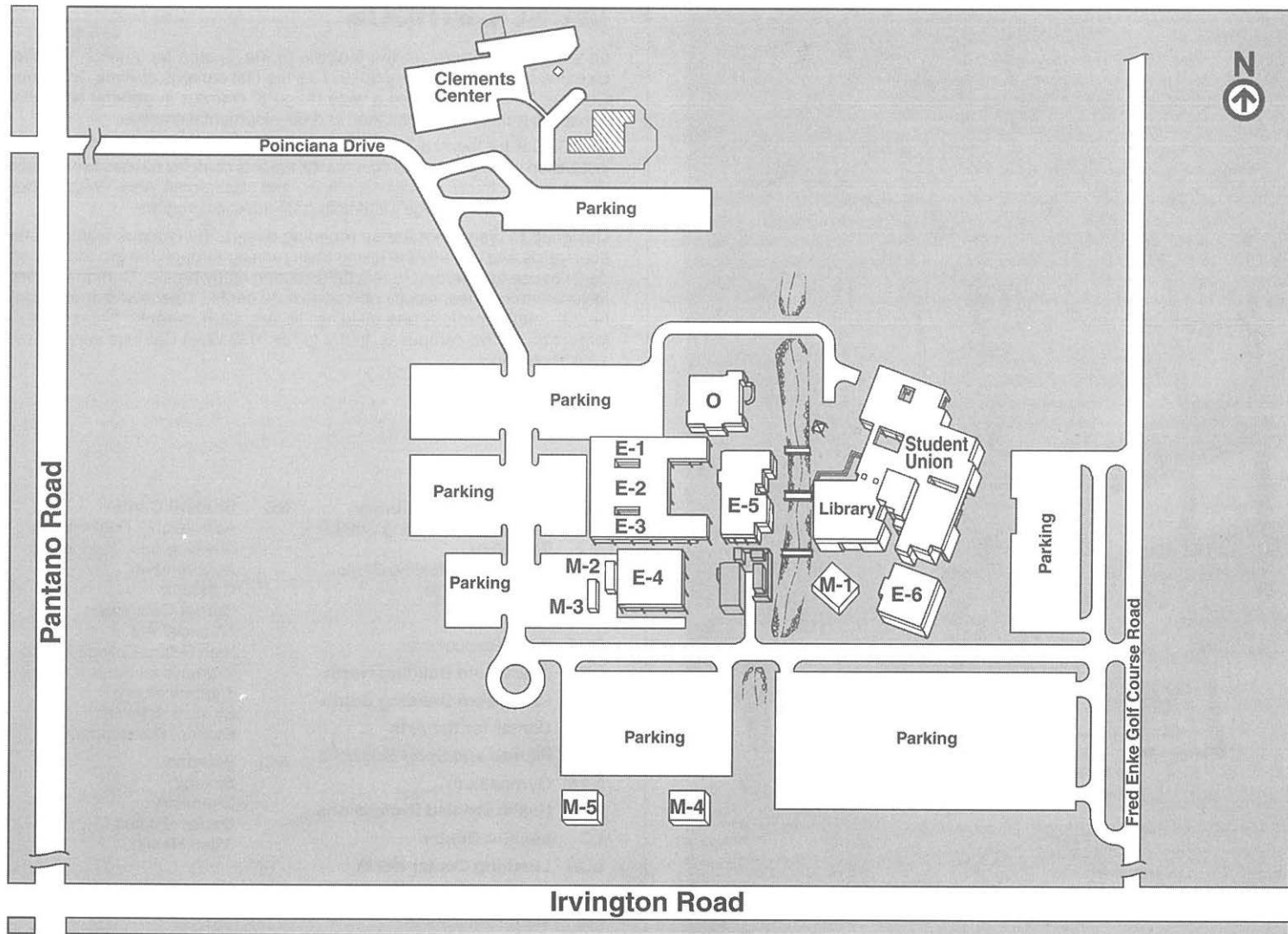
Arizona Astronomy  
Education Center

### Building M-5

ASETT Seminars

### Student Union

Bookstore  
Business Services  
Cadre Advising  
Cafeteria  
Career Center  
Counseling  
Cashier  
Community Room  
Dean of Student Development  
Disabled Student Resources  
Financial Aid/Veterans  
High School/College Relations  
Information Center  
Registration/Admissions  
Student Activities  
Upward Bound  
**Library**





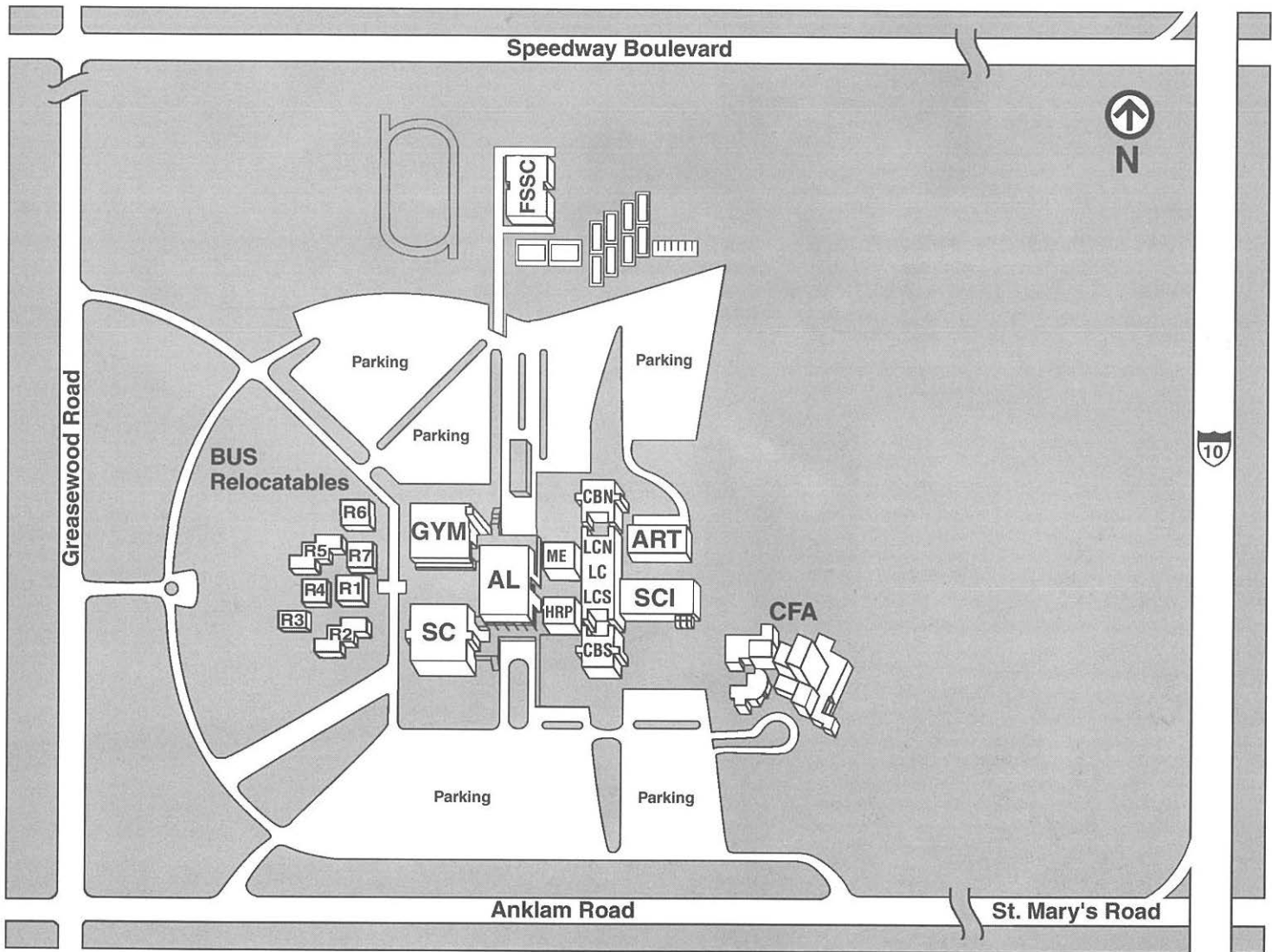
## West Campus

Located on 167 acres in the foothills of the Tucson Mountains, the West Campus opened in January of 1971 as the first campus of Pima Community College. Today, it provides a wide range of courses in general education, university transfer, occupational, and developmental courses.

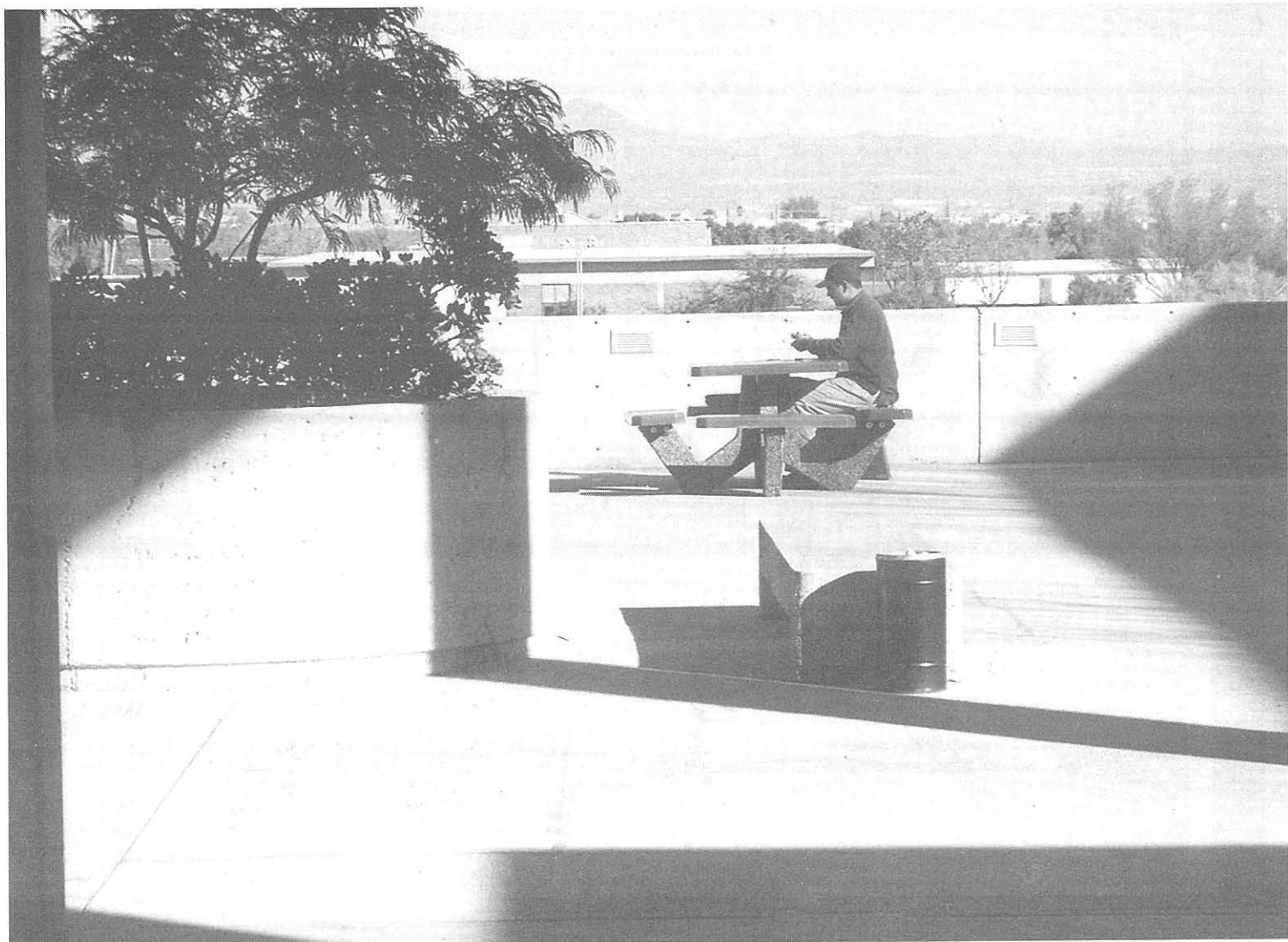
The Center for the Arts is also located at West Campus. Used for student instruction as well as by the community, the arts complex houses two theaters, an art gallery, music recital hall, offices, and classrooms. Also, West Campus is the home of the College's intercollegiate athletics program.

Designed to blend with the surrounding desert, the campus features inner courtyards and has several hiking trails running through the grounds for students to use for exercise or relaxation during study breaks. Campus facilities include laboratories, faculty offices, lecture center, fitness and sport center, health-related professions building, library, and computer center. As the largest of the five campuses, in the fall of 1998 West Campus enrolled over 13,000 students.

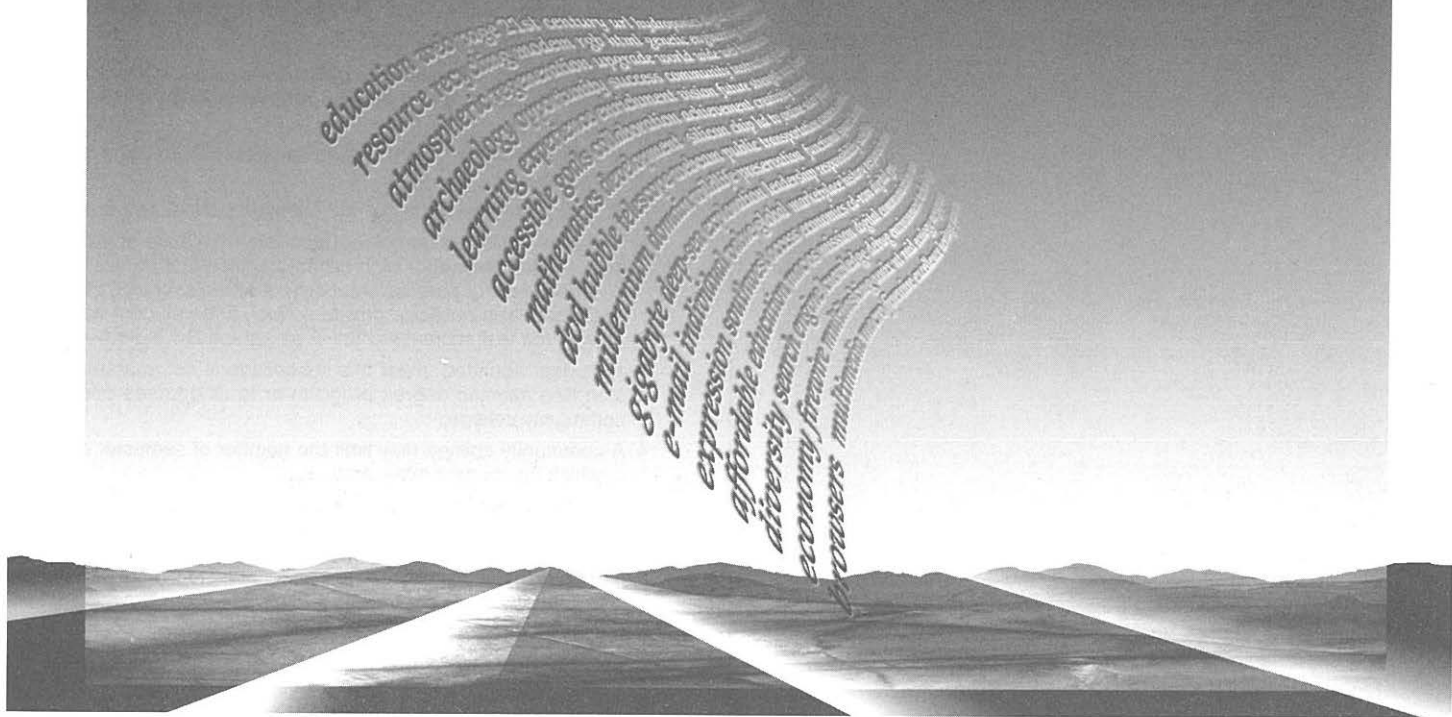
<b>AL</b>	<b>Administration/Library</b> Academic Computing Center Bookstore Instructional Testing Center Tutoring Center	<b>SC</b>	<b>Student Center</b> Admissions/ Registration Advising and Counseling Assessments Cafeteria Career Counseling Financial Aid High School/College Relations International Student Advising Job Placement Student Activities Student Development
<b>ART</b>	<b>Art</b>		
<b>BUS</b>	<b>R1-8, Relocatables</b>		
<b>CBN</b>	<b>Classroom Building North</b>		
<b>CBS</b>	<b>Classroom Building South</b>		
<b>CFA</b>	<b>Center for the Arts</b>		
<b>FSS</b>	<b>Fitness and Sport Sciences</b>	<b>SCI</b>	<b>Science</b> Biology Chemistry Dental Studies Allied Health
<b>GYM</b>	<b>Gymnasium</b>		
<b>HRP</b>	<b>Health Related Professions</b>		
<b>LC</b>	<b>Lecture Center</b>		
<b>LCN</b>	<b>Learning Center North</b>		
<b>LCS</b>	<b>Learning Center South</b>		
<b>ME</b>	<b>Math/Electronics</b>		

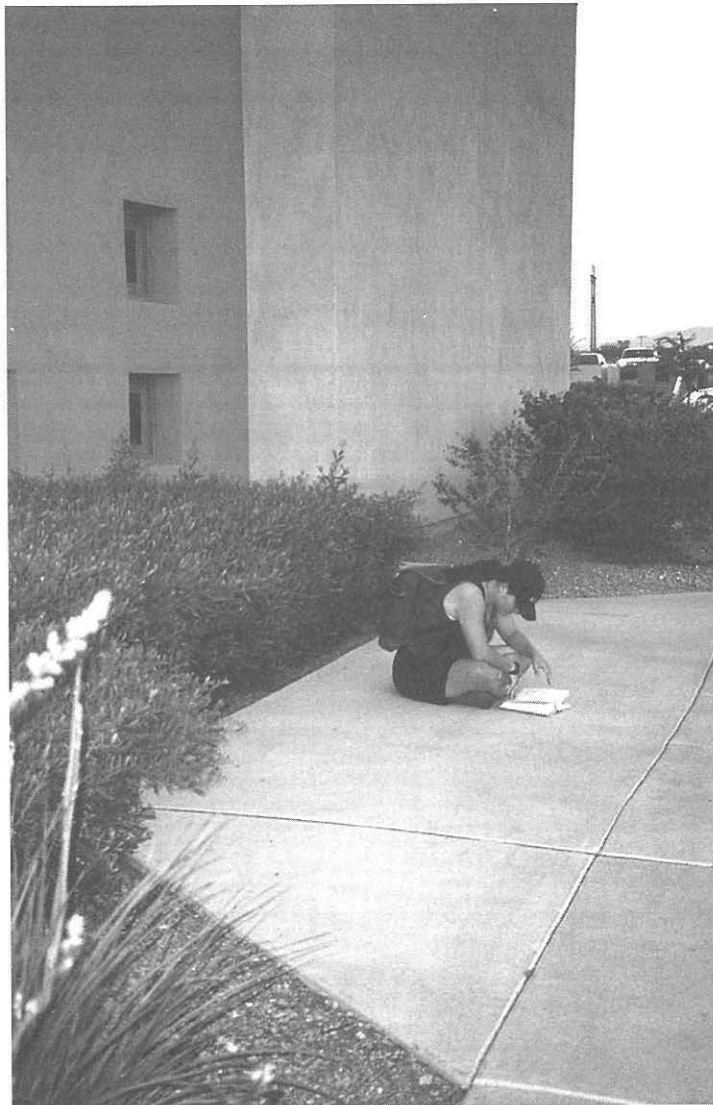






# Admissions, Registration, Records, and Graduation





## Admission to the College

- A. Admission of Regular Students—Admission to the community colleges in Arizona may be granted to any person who meets one of the following criteria (Arizona Community College Commission R7-1-20):
1. Is a graduate of a high school which 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 (GED);
  3. Is 18 years of age or older and demonstrates evidence of potential success in the community college;
  4. Is a transfer student in good standing from another college or university.
- B. Admission of Students Under 18 Years of Age
1. Admission to the community college in Arizona shall be granted to any student who is under age 18 and who achieves the following test scores:
    - a. SAT (Scholastic Aptitude Test) composite (verbal and math) of 930 or more, or
    - b. ACT (American College Test) composite of 22 or more.
  2. A student shall not be denied admission because of age, lack of a high school diploma or high school certificate of equivalency, grade in school, lack of permission of school officials, or lack of concurrent enrollment in a public or private school, if the student has achieved at least the test score specified in paragraph B.1.b. above.
  3. A student admitted under this subsection is not guaranteed admission to a specific degree program or to all courses offered by the community college.
  4. A community college may limit the number of semester credit hours in which the student may enroll.
- C. Admission of Students in Special Status—Students not meeting any of the provisions stated above (such as students currently enrolled in high school who present written approval from their principal and parents or legal guardian) or non-high school graduates/non-GED recipients may be admitted so long as the College officials determine that such admission is in the best interest of the students and the College.

#### D. Admission of International Students

1. An international student planning to enroll for 12 credit hours or more who has completed an academic program equivalent to an American secondary school and has a score of 450 or better on the Test of English as a Foreign Language (TOEFL) or whose native language is English.
2. An international student planning to enroll for less than 12 credit hours must demonstrate English proficiency if enrolling in courses other than English as a Second Language or courses offered bilingually.

For all programs, preference in admissions may be given to Pima and Santa Cruz County residents.

No person shall be denied admission to the College on the basis of sex, race, creed, color, national origin, age, or disability. Although Pima Community College is open to students who fall within the above categories, access to programs may be limited because of certain curriculum (course) requirements, financial constraints, and/or facility limitations.

**Transfer Students Under Suspension:** It is important that transfer students from other academic institutions admitted while under suspension of any type be aware that credits earned during their period of suspension may not be accepted for transfer by most colleges and universities.

Admissions Offices are open year-round at each of the College campuses to receive applications and to provide information on curriculum programs, class schedules, and registration procedures.

### International Student Admission

International students are welcome at Pima Community College. Their presence adds to the multicultural diversity which is a part of all aspects of the College.

The admissions requirements for all international students are listed below. Tuition and fees are paid at the same rate as out-of-state students. All international students are required to comply with the appropriate immigration standards and regulations.

#### Full-Time Students

All international students seeking admission to the College as full-time students (enrolling for 12 credit hours or more) must:

1. Have completed an academic program equivalent to an American secondary school,
2. Demonstrate proficiency in the English language by verifying a score of 450 or better on the Test of English as a Foreign Language (TOEFL),

3. Submit a completed application for admission, along with a \$25 non-refundable fee, to the International Student Admissions Office at the West Campus, located in Student Center Building, Room 234. (See campus maps.)

International students planning to be admitted on an F-1 visa may only enroll full-time. In addition to the preceding requirements, they must also do the following:

1. Submit a letter of financial guarantee.
2. Submit official transcripts in English of all work done at previous educational institutions.

The application for admission and other required information should be filed with the Senior Registration Technician in the International Student Office at the West Campus at least 90 days before the start of the semester for which the student wishes to enroll.

International students already in this country and seeking full-time admission must also submit the above-listed information at least two weeks before the beginning of the semester of enrollment.

To obtain information about international student admission, please contact our office at (Country Code 1) 520-206-6732 or at our Internet home page site at <http://www.pima.edu>.

#### Part-Time Students

International students who wish to attend Pima on a part-time basis must submit an application for admission. Students in the United States who are on a visa other than F-1 may attend part-time (enroll for less than 12 credit hours). Graduation from the equivalent of an American secondary school is not of primary importance. However, part-time international students must demonstrate English proficiency if they plan to enroll in courses other than English as a Second Language or courses offered bilingually.

### Student Residency Requirements

For tuition purposes, you must indicate your residency status when applying. All questions about your legal residency must be determined by the appropriate Admissions Office **before** registration and payment of fees for any semester or session. It is your responsibility as the student to apply for admission and to register under the correct residency status (domicile determination). Your domicile is determined as of the first day of the session in which you are enrolling. The following guidelines to determine residency status are taken from the Arizona Revised Statutes Sections 15-801 through 15-807. If you have difficulty in understanding these regulations, please contact any Admissions Office.

## SECTION 15-801 Definitions

In this article, unless the context otherwise requires:

1. "Armed forces of the United States" means the army, the navy, the air force, the marine corps, the coast guard, the commissioned corps of the United States Public Health Services, and the National Oceanographic and Atmospheric Association.
2. "Continuous attendance" means enrollment at an educational institution in this state as a full-time student, as such term is defined by the governing body of the educational institution for a normal academic year since the beginning of the period for which continuous attendance is claimed. Such person need not attend summer sessions or other such intersession beyond the normal academic year in order to maintain continuous attendance.
3. "Domicile" means a person's true, fixed and permanent home, and place of habitation. It is the place where he intends to remain and to which he expects to return when he leaves without intending to establish a new domicile elsewhere.
4. "Emancipated person" means a person who is neither under a legal duty of service to his parent nor entitled to the support of such parent under the laws of this state.
5. "Parent" means a person's father or mother, or if one parent has custody, that parent, or if there is no surviving parent or the whereabouts of the parents are unknown, then a guardian of an unemancipated person if there are not circumstances indicating that such guardianship was created primarily for the purpose of conferring the status of an in-state student on such unemancipated person.

## SECTION 15-802 In-State Student Status

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 he is domiciled for **one year**, except that a person whose domicile is in this state is entitled to classification as an in-state student if he meets one of the following requirements:
  - a. His parent's domicile is in this state and his parent is entitled to claim him as an exemption for state and federal tax purposes.
  - b. He is an employee of an employer which transferred him to this state for employment purposes or he is the spouse of such employee.
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, so long as such person maintains continuous attendance.
5. A person who is a member of the armed forces of the United States stationed in this state pursuant to military orders or who is the spouse or a dependent child as defined in Section 43-1001 of the armed forces of the United States stationed in this state pursuant to military orders is entitled to classification as an in-state student. 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 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.

## SECTION 15-803 Alien In-State Student Status

An alien is entitled to classification as an in-state refugee student if such person has been granted refugee status in accordance with all applicable laws of the United States and has met all other requirements for domicile.

## SECTION 15-804 Presumption Relating To Student Status

Unless the contrary appears to the satisfaction of the registering authority of the community college or university at which a student is registering, it shall be presumed that:

1. No emancipated person has established a domicile in this state while attending any educational institution in this state as a full-time student, as such status is defined by the State Board of Directors for Community Colleges or the Arizona Board of Regents, in the absence of a clear demonstration to the contrary.
2. Once established, a domicile is not lost by mere absence unaccompanied by intention to establish a new domicile.
3. A person who has been domiciled in this state immediately prior to becoming a member of the armed forces of the United States shall not lose in-state status by reason of such person's presence in any other state or country while a member of the armed forces of the United States.

## SECTION 15-805 Student Status Regulations

The Arizona Board of Regents and the State Board of Directors for Community Colleges shall adopt guidelines applicable to all institutions under their respective jurisdictions that will insure uniform criteria to aid the institutions in determining the tuition status of any student and that will establish uniform procedures for review of that status.



### **SECTION 15-806 Testimony Concerning Student Status: Designation of Persons to Administer Oaths**

The Arizona Board of Regents and the State Board of Directors for Community Colleges shall designate a person employed at each institution under their respective jurisdictions to administer oaths or affirmations in connection with the taking of testimony relative to student status for tuition purposes.

### **SECTION 15-807 Concurrent Enrollment; Nonresident Tuition**

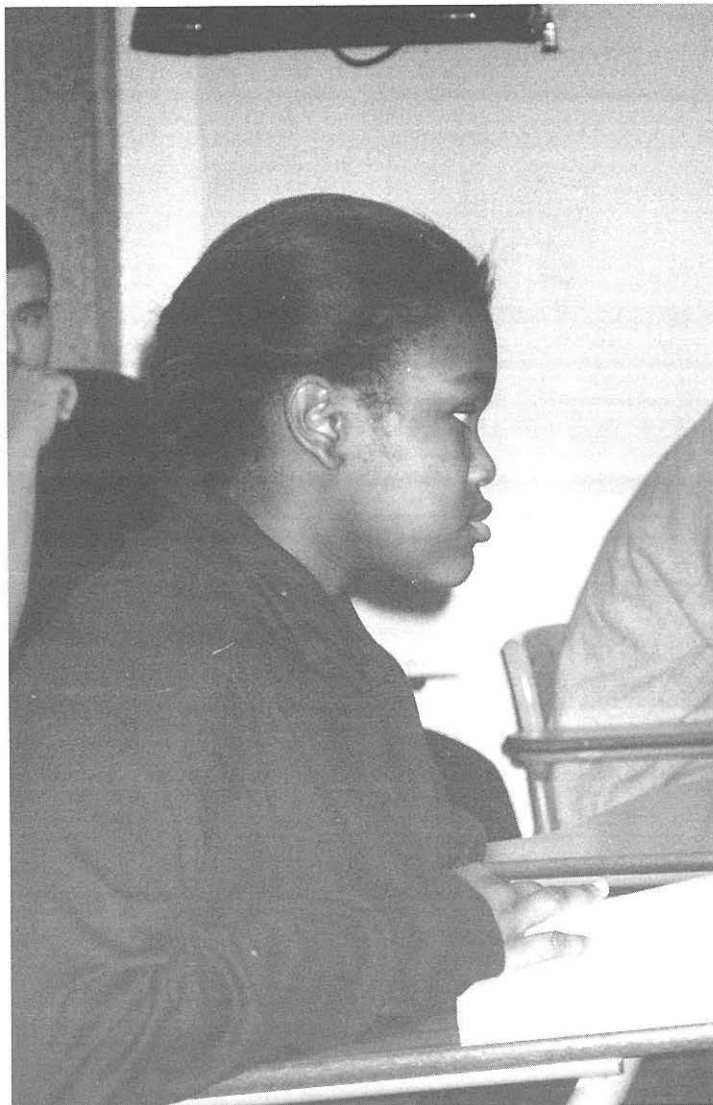
1. It is unlawful for any nonresident student to register concurrently in two or more public institutions of higher education in this state including any university or community college for a combined student credit hour enrollment of more than six semester hours without payment of nonresident tuition at one of such institutions.
2. Any nonresident student desiring to enroll concurrently in two or more public institutions of higher education in this state including any university or community college for a combined total of more than six semester hours who is not subject to nonresident tuition at any of such institutions shall pay the nonresident tuition at the institution of his choice in an amount equivalent to nonresident tuition at such institution for the combined total of semester hours for which the nonresident student is currently enrolled.

### **Evidence of Domicile**

In some cases, you may have to present documents for the College to verify your in-state status. The State Board of Directors for Community Colleges Regulation 7-1-23 provides the following guidelines regarding documents that you may present.

1. An affidavit signed by the student must be filed with the person responsible for verifying domicile.
2. One or more of the following may be used in determining a student's domicile in Arizona:
  - a. Driver's license
  - b. Income tax return
  - c. Voter registration
  - d. Automobile registration
  - e. Place of graduation from high school
  - f. Source of financial support
  - g. Dependency as indicated on federal income tax return
  - h. Ownership of real property
  - i. Notarized statement of landlord or employer
  - j. Bank accounts
  - k. Other relevant information





## Immunization

Several serious communicable illnesses can now be completely prevented by immunization. In recent years, measles/rubella has been an especially serious problem on college and university campuses. To safeguard your health and to prevent illness which could interrupt your education, you are urged to seek immunization for these illnesses if you were born after January 1957.

Measles/rubella inoculations are available at all Pima County Health Department Offices, for a minimal fee, or from private physicians. For information on inoculations, call Pima County's Immunization Program Office at (520) 740-3755.

## Registration

### Declaring a Program of Study

Once you have been admitted to Pima Community College, you need to declare your program of study (major) and make sure that it is listed correctly on your records. By doing so, you ensure that the advisors and counselors can help you in choosing the right courses for your program and check to see if you are meeting the graduation requirements. In addition, you will help make sure that you remain eligible for your financial aid or veterans affairs benefits.

### Enrolling in Classes

Once you have been admitted to Pima Community College, you have three ways to enroll.

- Automated touchtone telephone registration system MAX 2000
- Operator-assisted telephone registration
- Walk-in registration at all campus and district Admissions Offices

Your enrollment is not considered official for any academic term until all tuition and fees are paid. You can get specific registration information for each academic term in the *Schedule of Classes* (published before each term). You can also contact any of the campus or district Admissions Offices or the general information line (206-4500). In addition, you can receive information through the Pima Community College cable channels (check with your cable company for which channels) and from the Pima Community College Internet home page at <http://www.pima.edu>.

## Maximum Credit Hours Per Semester

You can enroll for no more than 18 credit hours in either the fall or spring semester, and for no more than 12 credit hours during the summer sessions. These limits include resident work, registration with the University of Arizona, and extension, correspondence, or high school courses taken at the same time.

If you wish to exceed this maximum credit hour load, you must obtain appropriate approval from the campus Dean of Instruction/Vice President or designee.

## Prerequisites

When you register for a course, you must meet the prerequisites as stated in the catalog, or otherwise satisfy the teacher of your preparedness to take the course. If you do not have the proper prerequisites for the class, the teacher can withdraw you from that course after notifying you.

## Schedule of Classes

In addition to the *College Catalog*, one of the other main tools you will need during your college career is the *Schedule of Classes*. This document is published before the registration period for the fall and spring semesters and summer sessions. The *Schedule of Classes* contains a list of courses being offered, with the dates, times, and locations of each class section. It also gives you instructions on when and how to register and has information on financial aid, advising, student resources, and important dates and deadlines for the upcoming semester or sessions.

## Student Handbook

The Pima Community College *Student Handbook* is another key tool to help you succeed while at the College. The handbook provides information on different student services (including how to apply for financial aid), tips on how to study and take tests and notes, an overview of the *Student Rights and Responsibilities*, a description of each campus, and telephone numbers for frequently used offices and services. The *Student Handbook* is available to all students at each campus.

## Attendance

Students are expected to attend all enrolled classes regularly and punctually. All students shall be provided in writing the attendance requirements established by each instructor or department. Absences exceeding these requirements may result in the student being withdrawn from a class by the instructor.

Students are responsible for notifying their instructors in advance of an absence due to participation in official College activities and for completing class assignments as required.

## Student Accommodation on Religious Days

Pima Community College accommodates the religious observances and practices of students unless undue hardship to College programs will result. Absences for such religious observances and practices shall not count against the number of absences allowed by an instructor or department. At least two weeks prior to the religious observance, students shall submit to their instructor(s) a written statement which contains both the date of the observance and the reason why class attendance is impossible.

## Student Rights and Responsibilities

All students at Pima Community College are considered to be responsible adults. Therefore, they are accountable for their own personal behavior. The College expects all students to obey local, state, and federal laws and conform to the College's standards of conduct. For more information on student complaint procedures and student rights and responsibilities, read Pima Community College's *Student Rights and Responsibilities*. Copies of this document are available from the offices of the campus Deans of Student Development and Instruction, campus advising and counseling centers, and campus libraries. An overview is available in the current *Student Handbook*.

# Student Records

## Family Educational Rights and Privacy Act

Pima Community College informs its students annually of the Family Educational Rights and Privacy Act of 1974. This act, with which the institution intends to fully comply, was designated to protect the privacy of educational records, to establish the right of students to inspect and review their education records, and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with the Family Educational Rights and Privacy Act Office concerning alleged failures by the institution to comply with the act.

Questions concerning the Family Educational Rights and Privacy Act may be referred to the Office of the Registrar.

## Student Information Covered under the Act

Pima Community College hereby designates categories of student information as public or directory information. Such information may be disclosed by the College for any purpose at its discretion.

Public or directory information includes the student's name, address, telephone number, date of birth, major field of study, classification status (freshman, sophomore, full-time, part-time), participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees, honors, awards received, and most-recent previous educational agency or institution attended by the student.

The College maintains a closed (unpublished) student directory. In addition, **currently enrolled students may instruct the College not to disclose public or directory information for any purpose** under the Family Educational Rights and Privacy Act of 1974. To withhold disclosure, written notification must be received by a campus Office of Admissions and Records prior to the end of drop/add for each semester concerned. A form is published in the Fall, Spring, and Summer editions of the *Schedule of Classes*.

Pima Community College assumes that any student who does not specifically request the withholding of public or directory information indicates individual approval for disclosure.

## 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. This 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 at the instructor's option. If the student does not complete the work and a final grade form is not submitted within one year, the Incomplete will be automatically changed to a "Y." A student receiving a grade of "I" will be provided with a standard form specifying the work necessary and a time frame for completion of the course. The instructor who gives the grade of "I" is responsible for grading the student's required work as identified on the "Incomplete Grade" form. When the student's work is completed, the instructor submits a "Change of Grade" form to the Admissions Office.

W—Official Withdrawal: This grade may be requested by the student only during the first two-thirds of any session. This grade may be given by the

instructor on or before the official census reporting date to students who have ceased attending class before that date.

Y—General Withdrawal: This grade may be given by the instructor at his/her discretion at the end of the term when circumstances dictate that none of the other grades are appropriate.

X—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 course 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 transcript of grades and on the class 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.

## Graduation Requirements

Graduation requirements include a 2.0 overall grade point average (GPA). The GPA is found by multiplying the number of credit hours for each course by the number of points for the grade and dividing the sum of the total points by the total number of credit hours of "A," "B," "C," "D," and "F" grades. "D" grades do not fulfill graduation requirements if they are received in core courses. "F" grades do not fulfill any requirements. The GPA is based only on work completed at Pima Community College. A complete record of all credit courses attempted at Pima Community College is maintained for each student. Grade reports are mailed to each student at the end of each session.

## Official Withdrawal Guidelines

Students may request a grade of "W" (official withdrawal) only during the first two-thirds of the calendar days of any session based upon beginning and ending dates for classes as contained in the College's *Schedule of Classes*. For open entry/open exit classes, the two-thirds deadline is based upon calendar days between the date of a student's initial registration and the last day of the semester or session. In classes of two or less calendar days, instructor approval will be required if the "W" grade is requested after the class begins.

Instructors may award a "W" grade only on or before the official census reporting date to students who have ceased attending class before that date.

## Course Repeat

The higher of two grades earned for the same course will be used for the computation of the GPA. Both courses will remain on the student's transcript.

## Academic Standards of Progress

The following criteria will be applied to determine good academic standing at Pima Community College. All students will be in good academic standing provided their cumulative grade point average (GPA) meets or exceeds the standards listed below.

Credits Completed	Minimum Cumulative Grade Point Average (GPA)
0 - 3	1.0
4 - 9	1.2
10 - 14	1.3
15 - 24	1.5
25 - 48	1.75
49 or more	2.0

Credit hours completed include those credits earned at Pima Community College with a grade of "A," "B," "C," "D," "F," or "P."

### Academic Alert

Students will be placed on academic alert when:

1. Their cumulative grade point average (GPA) does not meet the minimum standards for good academic standing.
2. They have appealed and been reinstated after having been placed on academic disqualification.

The academic alert system:

1. Informs students of academic status.
2. Allows students one semester to raise their GPA to the minimum GPA for good academic standing.
3. Advises students of available College resources which may assist in improving academic performance.

### Academic Disqualification

A student on academic alert will be academically disqualified under the following condition:

After the academic alert semester, he/she has not raised the cumulative GPA to the required minimum identified above. (Exception: If the student earns a 2.0 GPA or higher for the current semester he/she will be permitted to continue on academic alert status.)

A student who has been academically disqualified will not be permitted to enroll until he/she has been reinstated through the College appeal procedure. Specific procedures for appeal are outlined within the notification letter that is provided to students who are disqualified.

### Appeal of Academic Disqualification

A student who has been academically disqualified must follow established College appeal procedures for reinstatement.

A student who feels that unusual circumstances contributed to the unsatisfactory academic progress may follow the established College appeal procedures to request immediate reinstatement.

### Reinstatement

Students appeal the academic disqualification in accordance with established College appeals procedures. (See the *Student Rights and Responsibilities* document.) After reinstatement the student will be placed on academic alert status.

### Appeal of Grades

There is an appeal process for grade challenges. Please refer to the *Student Rights and Responsibilities* document which can be obtained from the offices of the campus Deans of Student Development and Deans of Instruction, campus advising and counseling centers, and campus libraries.

## 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 or 6 or more credit hours for a ten-week summer session or 4 or more credit hours for a five-week summer session will be classified as full-time students.

### Part-Time Student

Students enrolled for 1 to 11 credit hours during the fall or spring semester or 5 or fewer credit hours for a ten-week summer session or 3 or fewer credit hours for a five-week summer session will be classified as part-time students.

### Freshman

Students who have earned 27 or fewer credit hours will be considered freshmen.

### Sophomore

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





## Transfer of Credits into PCC

If you have taken courses at another college or university, Pima Community College may accept them and consider them as part of the fulfillment of the requirements in earning your degree.

### How to Transfer Credits

The College may accept previously completed coursework from another accredited institution if it is with a grade of "C," its equivalent, or better. For more information on acceptable accredited institutions, see below under "Agreements with Other Institutions." In addition, any accepted credit must be applied to the completion of your chosen program of study (major).

Before the College can decide if any of your credits will transfer, you must follow these steps:

1. Order an official transcript to be sent from the institution(s) previously attended directly to the District Transcript Office at 4905 E. Broadway, Suite 220, Tucson, AZ 85709-1120.
2. Go to any campus Admissions Office to complete and turn in a written request asking the College to evaluate if it will accept any of the credits.

The campus Admissions Office cannot evaluate your transcripts unless you are currently enrolled in classes and have turned in your written request.

If you are not enrolled and you have transcripts sent to the District Transcript Office, that office will notify you in writing that the transcript has been received. You will have one year to enroll and turn in your request. If you have not done so within that time period, your transcript will be destroyed. If you have attended Pima in the past, are not currently enrolled, and are now applying for graduation, you may request an evaluation of transfer credit to put toward your degree requirements.

### Agreements with Other Institutions

Pima County Community College District may have official relations with other higher education institutions. These relationships are known as "articulation agreements." These other institutions have received full accreditation with one of the following regional accreditation commissions:

- Middle States Association of Colleges and Secondary Schools
- New England Association of Colleges and Schools, Inc.
- North Central Association of Colleges and Secondary Schools
- Northwest Association of Secondary and Higher Schools
- Southern Association of Colleges and Schools
- Western Association of Schools and Colleges

## Acceptance of General Education Credits from Other Community Colleges in Arizona

To earn a degree or certificate at Pima Community College, you must complete coursework that fulfills the General Education requirement. If you have taken some or all of these courses at another community college district in Arizona, Pima will accept these credits in fulfillment of your General Education requirements. Pima accepts the Arizona General Education Curriculum (AGEC) from other Arizona community colleges.

## Transfer Credits to Another College or University

Many students who attend Pima Community College go on to attend another college or university to earn a bachelor's degree. If you plan on attending one of Arizona's three public universities, PCC has several tools to help you plan your program of study (major) with that goal in mind.

### Arizona Higher Education Course Equivalency Guide

The publication *Course Equivalency Guide (CEG)* helps students figure out what the equivalent of PCC courses numbered 100 or above are at Arizona State University, Northern Arizona University, and the University of Arizona. This tool helps students and advisors and counselors know how a PCC course will transfer. The *CEG* is updated every year. To fully understand how to use the *CEG*, please see an advisor or counselor.

You can see a copy of the Pima Community College portion of the *CEG* at any campus advising and counseling center or you can buy a copy at any campus bookstore. In addition, you can consult the *CEG* through PCC's World Wide Web home page site (<http://www.pima.edu>). You can gain access to the PCC home page through a computer at any campus library, campus computer center, several Tucson-Pima County Public libraries, the University of Arizona, or from your home or office via a personal computer with Internet service. Students with personal computers with a modem can also access the *CEG* through PIMAINFO (dial 206-6060, at Local> c pimacc and the user name PIMAINFO).

### University Transfer Guide

If you know to which of the three Arizona public universities you will transfer and for what degree, the university transfer guides are a useful tool in planning your education. These guides list what Pima Community College courses fulfill degree requirements at Arizona State University (ASU), Northern Arizona University (NAU), and University of Arizona (UA). There is a guide for each degree at ASU, NAU, and UA. To use a transfer guide, please see an advisor or counselor. The guides are available at any campus advising and counseling centers, and the ASU and UA guides can be viewed through PCC's World Wide Web home page site (<http://www.pima.edu>). You can gain access to the PCC home page through a computer at any campus library, campus computer center, several Tucson-Pima County Public libraries, the University of Arizona,

or from your home or office via a personal computer with Internet service. Students with personal computers with a modem can also access the university transfer guides through PIMAINFO (dial 206-6060, at Local> c pimacc and the user name PIMAINFO). The transfer guides are updated annually.

## Transfer General Education Courses

To help students planning on transferring to one of the three Arizona public universities, there is a block of 35 community college General Education credit hours known as the Arizona General Education Curriculum (AGEC). By completing this block of credits, the student will fulfill all lower-division General Education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGEC is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor for more information.

If a student does not complete all 35 credits of the AGEC, lower-division General Education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course-by-course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See the complete course listing under each of the AGEC categorical requirements, found in the Transfer General Education Course List in the General Education section of this catalog. Or see an advisor or counselor for complete information.

## Credit by Examination

Pima Community College realizes that when you enter the College, you may have already gained the knowledge and/or ability to perform the work of certain course and program requirements. Therefore, you have the opportunity to earn college credit by "advanced placement." You receive this advanced placement and credit by passing examinations given by the College.

Please note that you cannot receive credit by examination for a course that is lower than the one in which you are currently enrolled or for one in which you have already received credit. Also, credit by examination may or may not transfer to other colleges or universities. In addition, credit by examination does not fulfill the requirement of completing 15 credit hours at PCC. It also cannot be used in qualifying a student for veterans benefits.

Credit by examination shall include:

1. Advanced placement examinations from high school.
2. College-Level Examination Program (CLEP).
3. Special examination for credit.

### Advanced Placement from High School

Every year during the month of May, you can take the credit examinations at various high schools in the Tucson area. These exams test your ability and knowledge in specific subject areas at the level of lower-division college courses. If you are a senior in high school, through the school counselor's office, you may request to take the exams for credit in one or more areas. A fee is charged for each exam. If you receive a three (3), four (4), or five (5) on these exams, you will be awarded Pima Community College credit in that subject area.

### College-Level Examination Program (CLEP)

Two types of exams are available under this program for those who wish to earn college credit by examination:

1. **General Examinations**—Through the Downtown Campus Assessment Center, you can take five general examinations: English Composition, Humanities, College Mathematics, Natural Sciences, and Social Sciences and History. You must pay a registration service fee and an examination fee for each test. To take them, you must be currently enrolled at PCC or have attended the College in the last five years. For more information about taking the CLEP General Examinations, please contact the Downtown Campus Assessment Center at 206-6370. To get more information about the equivalency of the credit and PCC courses, please contact any campus Admissions Office.
2. **Subject Examinations**—The CLEP also offers subject exams that are more specific and contain material typically covered in college-level courses. The testing office at the University of Arizona offers 29 of these subject examinations. Before you take any of these tests, you are advised to contact any PCC Admissions Office to get information on which subject examinations will result in PCC course credit. You may be able to earn credit for one or more PCC courses when passing a subject examination. Subject examinations are offered at the University of Arizona, Old Main, Room 223, 621-7589. These tests are **NOT** offered at PCC. For more information about the equivalency of the credit and PCC courses, please contact any campus Admissions Office.

### Special Examinations for Credit or Grade

For selected courses taught at Pima Community College, you may receive credit by examination. You must be currently enrolled at PCC to receive the credit. You cannot get credit by examination for a course that is the same as or is at a lower level than the one in which you are currently enrolled or for which you have already received credit. For more information on credit by examination for selected courses, you need to talk with the proper departmental chairperson or faculty member.

## 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:

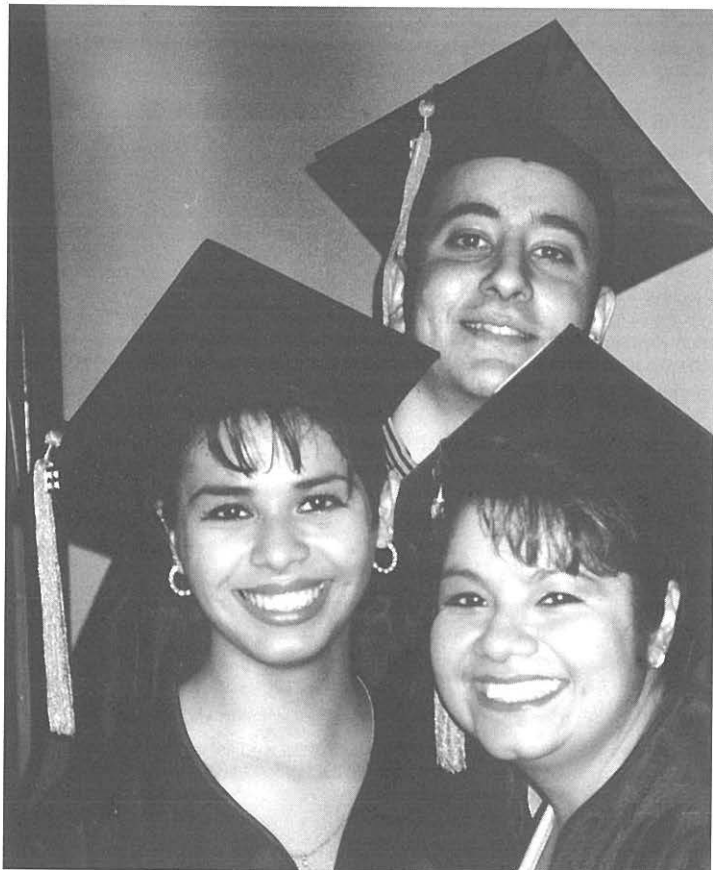
1. Violating or failing to comply with published rules and regulations of conduct of the College which prohibit the unlawful possession, use, or distribution of illicit drugs and alcohol by students and employees on College property or as part of any of its activities; or
2. Being under the influence 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 will 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 will assist students with appropriate referrals and information concerning drug and alcohol education, counseling, treatment, or rehabilitation or reentry programs that may be available in the community. Contact the Advising and Counseling Center on any campus for information.

# Graduation

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

1. complete the General Education requirements for one of the following:
  - a. Associate of Arts Degree for Transfer
  - b. Associate of Science Degree for Transfer
  - c. Associate of Business Administration
  - d. Associate of General Studies Degree
  - e. Associate of Applied Arts Degree
  - f. Associate of Applied Science Degree
  - g. Advanced/Technical Certificate
2. complete their program's reading requirement,
3. complete program requirements for a degree or certificate, and
4. complete a graduation application by the dates specified in the college academic calendar.

## Catalog Under Which a Student Graduates

This catalog does not establish a contractual relationship. It does, however, summarize the requirements students must meet to qualify for a degree or certificate recommendation to the Governing Board of the Pima County Community College District.

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 single catalog in effect during subsequent terms of continuous enrollment. Students may maintain continuous enrollment whether attending a single public community college or university in Arizona or transferring among public institutions in Arizona while pursuing their degrees.

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

### Example 1:

Admitted & Earned Credit at a Community College	Fall 98	98/99 or subsequent catalog
Continued at a Community College	Sp 99, Fall 99	98/99 or subsequent catalog
Transferred to a University	Sp 2000	98/99 or subsequent catalog

2. Students who do not meet the minimum enrollment standard stipulated in No. 1 during three consecutive semesters (fall/spring) and the intervening summer term\* at any public Arizona community college or university are no longer considered continuously enrolled, and must meet requirements of the public Arizona community college or university catalog in effect at the time they are re-enrolled or of any single catalog in effect during subsequent terms of continuous enrollment after readmission.

Example 2A:

Admitted & Earned Credit at a Community College	Fall 98	98/99 or subsequent catalog
Nonattendance	Sp 99, Fall 99, Sp 2000	Inactive for 3 semesters/ loss of catalog after Sp 2000
Re-enrolled & Earned Credit at a Community College	Fall 2000	2000/2001 or subsequent catalog
Transferred to a University	Sp 2001	2000/2001 or subsequent catalog

Example 2B:

Admitted & Earned Credit at a Community College	Fall 98	98/99 or subsequent catalog
Nonattendance	Sp 99	Inactive/no loss of catalog
Re-enrolled & Earned Credit at a Community College	Sum 99	98/99 or subsequent catalog
Nonattendance	Fall 99, Sp 2000	Inactive/no loss of catalog
Transferred to a University	Fall 2000	98/99 or subsequent catalog

3. Students admitted or re-enrolled to a public Arizona community college or university during a summer term must follow the requirements of the catalog in effect the following fall semester or of any single catalog in effect during subsequent terms of continuous enrollment.

Example 3:

Admitted & Earned Credit at a Community College	Sum 98	98/99 or subsequent catalog
Continued at a Community College	Fall 98, Sp 99	98/99 or subsequent catalog
Nonattendance	Fall 99	Inactive/no loss of catalog
Re-enrolled & Earned Credit at a Community College	Sp 2000	98/99 or subsequent catalog
Transferred to a University	Sum 2000	98/99 or subsequent catalog

4. Students transferring among Arizona public higher education institutions must meet the admission requirements, residency requirements, and all curricular and academic requirements of the degree-granting institution.

## Time Limit for Coursework

In areas of study in which the subject matter changes rapidly, material in courses taken many years before graduation may become obsolete or irrelevant. Coursework that is more than eight years old is applicable to completion of 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 or university transfer programs 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.

## Application for Graduation

Students are required to make application for the receipt of certificates and/or degrees by the dates specified in the College academic calendar. Failure to do so may result in a delay in processing until the following semester.

## 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 3.7999 grade point average—Graduation with Honors

3.800 to 4.000 grade point average—Graduation with High Honors

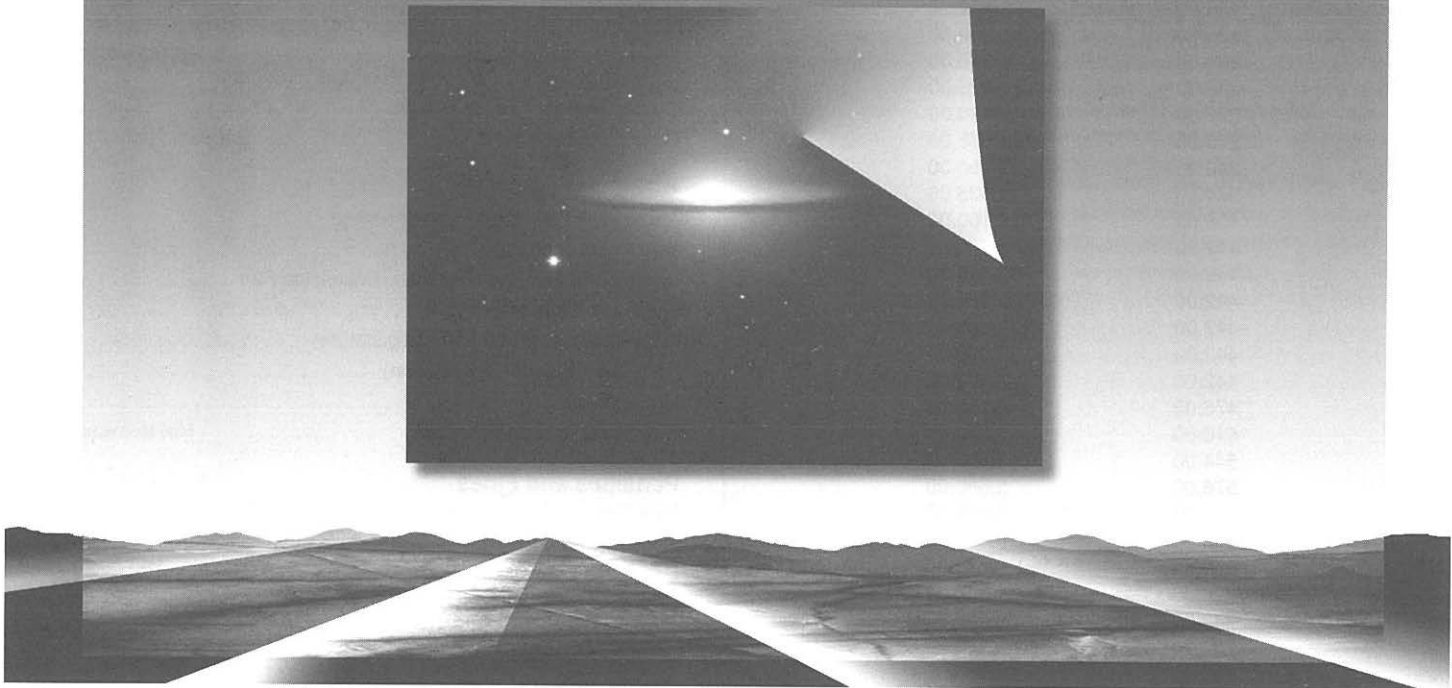
These designations will be shown on diplomas and listed on students' official transcripts.

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\*Students are not obligated to enroll and earn course credit during summer terms, but summer enrollment may be used to maintain continuous enrollment status.



## Costs and Payments



# Tuition and Fees

The following information reflects the College's tuition, fee, and refund policies for the Fall 1999, Spring 2000, and Summer 2000 (all sessions) semesters. **Tuition, fees, and refunds are subject to change. Please refer to a current Schedule of Classes for the most up to date information.**

## Tuition - All Semesters

Credit Hours	In-State Resident	Out-of-State/Country
1	\$ 34.00	\$ 58.00
2	68.00	116.00
3	102.00	174.00
4	136.00	232.00
5	170.00	290.00
6	204.00	348.00
7	238.00	1,225.00
8	272.00	1,400.00
9	306.00	1,575.00
10	340.00	1,750.00
11	374.00	1,925.00
12	408.00	2,100.00
13	442.00	2,275.00
14	442.00	2,416.00
15	442.00	2,557.00
16	442.00	2,698.00
17	442.00	2,839.00
18	442.00	2,980.00
19	476.00	3,155.00
20	510.00	3,330.00
21	544.00	3,505.00
22	578.00	3,680.00
23	612.00	3,855.00
24	646.00	4,030.00
25	680.00	4,205.00
26	714.00	4,380.00
27	748.00	4,555.00
28	782.00	4,730.00
29	816.00	4,905.00
30	850.00	5,080.00

## Fees

### Fees Applicable to all Students

Registration Processing Fee	\$5.00
Withdrawal Fee (total withdrawal from more than 7 credits)	\$10.00

### Credit Course Fees

Misc. Lecture Fee	Not to exceed \$40.00 (to recover extra costs specifically related to the course)
Misc. Laboratory Fees	Not to exceed \$20.00
Health Science Liability Insurance (per semester)	\$15.00 - \$20.00
Music Lessons (individual)	1/2 hour per week \$248.00 1 hour per week \$496.00
Communication Graphics	Not to exceed \$60.00 (based upon specialized software and support training requirements)
Aviation Mechanics Program	Not to exceed \$75.00 (based upon direct cost of instructional materials)
Course Repeat Fee (per credit)	\$34.00
Course-Related Field Trip	Based on actual cost of trip

### Miscellaneous Fees

Application Fee (out-of-state/country)	\$15.00
Transcripts (per copy)	\$2.00
Deferred Tuition Payment Plan Processing Fee	\$15.00
Graduation Application	\$15.00
GED Test (fee set by State Legislature)	\$25.00
GED Test (repeat each section)	\$5.00
ID Card	\$2.00
Career Interest Fee (per test)	Not to exceed \$20.00

### Penalties and Fines

Late Fee	\$25.00
Nonsufficient Funds Checks (per each occurrence)	\$25.00
Excessive Loss or Breakage	Replacement cost
Lost Books	Replacement cost plus \$10.00 handling fee
Parking and Traffic Fines	\$10.00 - \$25.00 (per violation of parking and traffic regulations)

# Tuition and Fees Payment Methods

You must pay your tuition and fees in full by the published payment deadline. The payment deadlines for each term are published in the *Schedule of Classes*. The dates are also available at any campus Cashier's or Admissions Office. You can pay your tuition and fees using any of the following payment methods:

- Credit Card - Visa, MasterCard, American Express, Discover, or CollegeCard
- Check - traveler's, cashier's, or personal check
- Money order
- Cash

If you pay with a personal check, it must be made payable to Pima Community College. Please write your student identification number (in most cases, this is your social security number) on the check along with the academic term for which you are paying. When you pay in person, you are required to provide at least one form of picture ID. **Please note that it is college policy to write student ID numbers on checks when students fail to do so.**

## Student Refund Policy for Credit Courses

### Regular Refund Policy

If you process a drop within the official refund schedule below, you may be eligible for a refund. The drop must result in a decrease to your total tuition assessment as determined by the number of credit hours for which you are registered. Refer to the "Tuition and Fees" section of the *Schedule of Classes* to determine whether your drop will decrease your tuition assessment.

If you drop all your classes within the official refund period, you will be eligible for a 100% 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, you will receive a 100% refund of paid tuition and fees for the class(es) being canceled.

Refund checks are processed on a weekly basis. See the *Schedule of*

*Classes* for the first scheduled refund date. Early refunds, or refunds to credit cards, must be approved by the Bursar's Office at 206-4574.

### Regular Refund Schedule

Course Length	Refund Deadline
Regular 16 weeks .....	within 13 calendar days after start of the semester
7 or more weeks .....	by the end of 7 calendar days from the day of first class meeting
4 to less than 7 weeks .....	within 4 calendar days from the day of first class meeting
2 to 4 weeks .....	within 1 calendar day from the day of the first class meeting
less than 2 weeks .....	prior to the day of first class meeting

Note: Refer to the *Schedule of Classes* for the program starting dates. Refunds will **not** be issued for classes dropped after the official refund deadlines.

### Special Refunds Policy

If you must totally withdraw from the College due to one of the unforeseen, emergency circumstances listed below, you may request a special provision refund at any campus Admissions Office. 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 shown below. The campus president (or designee) may approve a refund for extenuating circumstances not specifically included in the following provisions.

1. **Serious illness or injury.** You must provide a written doctor's statement verifying that your illness or injury prevented you from completing your classes.
2. **Death of a close family member.** The College defines close family members as your spouse, children, parents, grandparents, siblings, grandchildren, or in-laws. You must provide official documentation (such as a death certificate) to receive your 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 your request.

Note: Recipients of federal student aid are not eligible for special provision refunds. See "Student Federal Financial Aid Refund Policy" on the following page.

### Special Provisions Refund Schedule (pro-rated)

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

### Student Federal Financial Aid Refund Policy

If you receive federal financial assistance (either as a first-time student or as a continuing student) and then totally withdraw from the College, your paid tuition and fees will be refunded within the provisions stated below and paid directly back to the sponsoring program. The refund will be less a 5% administrative processing fee.

#### Refund Schedule for Financial Aid Recipients—First-Time Students

Elapsed Portion of Program	Refund (paid tuition and fees)
10%	90%
20%	80%
30%	70%
40%	60%
50%	50%
60%	40%

#### Prorated Financial Aid Refund Schedule—Continuing Students

Elapsed Portion of Program	Refund (paid tuition and fees)
25%	50%
50%	25%

## Student Refund Policy for Noncredit Corporate and Community Education Activities and Study Tours

Community Campus handles the enrollment and 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 below for penalties and refunds when ending (termination of) your registration in study tours and other trips. If the College cancels an activity, you will receive a full refund.

Every effort is made to contact those who have enrolled (known as participants) before the start date if the activity has to be canceled. If you do not hear from Pima Community College before the start date, your enrollment is confirmed. If you register by mail, please send your registration form and payment to Community Campus, Corporate and Community Education Offices, 401 North Bonita Ave. If you would like a registration receipt, please enclose a self-addressed, stamped envelope.

### Penalties and Refunds for Dropped Registration for Study Tours and Other Trips

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

**Trips of More than One Day**—Termination penalties are as follows:

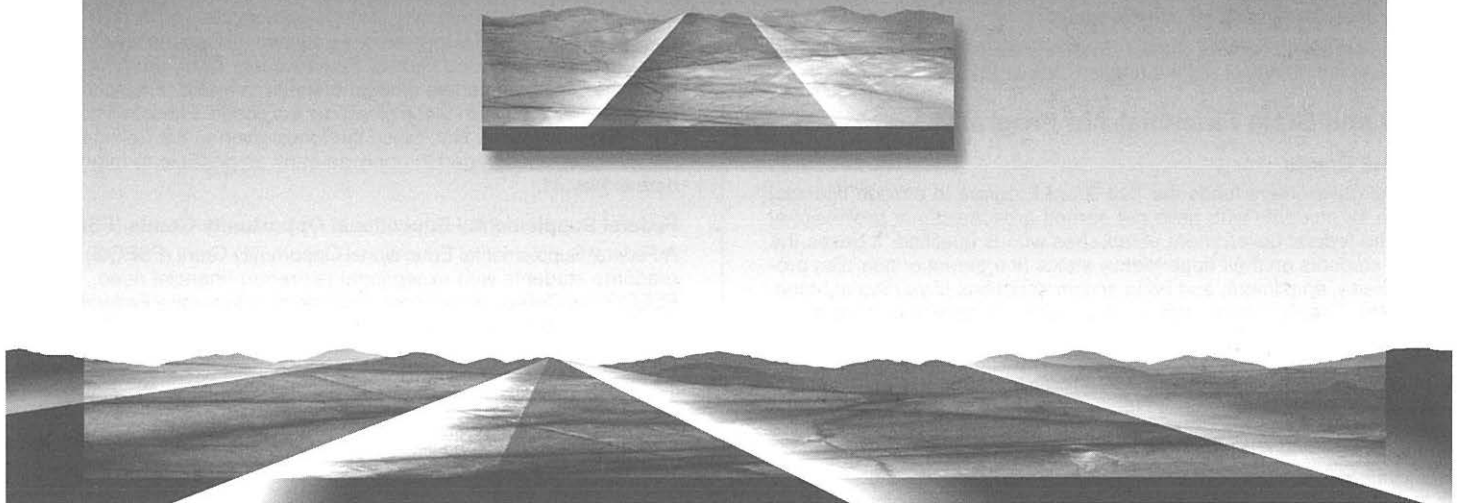
100% of tour fee if request is received within 13 calendar days of tour date.

50% of tour fee if request is received within 14 to 29 calendar days of tour date.

25% of tour fee or \$25, whichever is less, if request is received 30 calendar days or more prior to tour date.

Questions should be directed to the Corporate and Community Education Offices, 206-6569.

# Financial Assistance





# Financial Aid/Scholarships

## General Information

To provide all members of the community access to Pima Community College and to help them pay for the cost of their education, the Financial Aid Office offers a full range of student financial aid. The money for the financial assistance comes from federal and state programs as well as private donors. Funds are awarded to students based on financial need, academic achievement (grades), and program of study (major). Your first step to apply for financial aid is to complete the Free Application for Federal Student Aid (FAFSA) form. Certain scholarships may require a separate application.

You can pick up an application at any campus Financial Aid Office. To make sure you receive first consideration for the limited assistance available every August at the beginning of the fall semester, you should get your application into the PCC Financial Aid Office by May 31.

**Therefore, the FAFSA form should be completed and sent to the federal government by March 15.** Your application can then be processed and returned to PCC by the College's priority date of May 31. However, if you miss the priority date, you still may apply at any time of the year.

All students should apply as there might be something available for you. If you do not demonstrate financial need, you may qualify for scholarships, temporary short-term loans, or other programs.

For more information, see the current *Student Handbook* and *Financial Aid Guide*, or call the Financial Aid Information Line at (520) 206-4950.

## Federal and State Financial Aid Programs

### Federal Pell Grants

The federal government funds the Pell Grant Program to provide financial assistance for students who have not earned a bachelor's or professional degree. The federal government establishes who is qualified. It bases the awards to students on their dependency status (if a parent or guardian provides for them), enrollment, and living accommodations (if you live at home, rent, or own). The Pell Grant, unlike a loan, does not have to be repaid.

### Federal Stafford and Direct Loan Programs

The Federal Stafford and Direct Loan Programs offer "subsidized" and "unsubsidized" loans. Loans may be made through a bank or credit union that participates in the Stafford Loan Program, or they may be made directly by the school (the Direct Loan Program). A subsidized loan is awarded on the basis of financial need. If you qualify for a subsidized loan, the federal government pays the interest on the loan until you start repaying it. On the other hand, an unsubsidized loan is not awarded on the basis of need. If you qualify for an

unsubsidized loan, you pay the interest from the date you are given the loan until you repay the loan in full. You have the choice of paying the interest as it accrues (charged every month) or to let it accumulate (build up) and add the interest to the loan. You can receive both subsidized and unsubsidized loans. You must start to repay the loan or loans beginning six (6) months after you graduate, leave school, or drop below half-time enrollment.

### Federal Plus Loan Program

Federal Plus Loan Program is for parents who have students living with them as dependents. The loans are made directly by the school (the Direct Plus Loan Program) or through a bank or credit union that participates in the Stafford Loan Program. This loan program enables parents with good credit histories to borrow funds to pay for the education expenses of each child who is a dependent and an undergraduate student enrolled at least half-time. The parents cannot receive more than the cost of education, with the amount of any other financial aid received also deducted. The interest rate is variable, but it will never exceed nine (9) percent. The interest rate for Plus Loans is adjusted each year on July 1. 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 (be charged) from the date the first loan payment is given.

### Campus-Based Programs

The federal government has three programs in which funds are given out from the College. Pima Community College participates in these campus-based programs: the Federal Supplemental Educational Opportunity Grant, the Federal Work Study, and the Federal Perkins Loan. Every year the government gives the College a certain amount of funds to award. Financial need is the qualification upon which these programs are based. Funds will be awarded to the neediest students first. Since the funds given to the College are limited, students are encouraged to apply as early as possible to meet the priority date of May 31.

### Federal Supplemental Educational Opportunity Grants (FSEOG)

A Federal Supplemental Educational Opportunity Grant (FSEOG) is for undergraduate students with exceptional (extreme) financial need. In awarding FSEOG, the College gives priority to students who receive Federal Pell Grants. *An FSEOG does not have to be paid back.*

### Federal Work-Study

The Federal Work-Study Program provides jobs for students with financial need. Students may work up to 20 hours per week in a job that is either on-campus or off-campus. The program encourages community service work and work related to students' courses of study.

### **Federal Perkins Loans**

A Federal Perkins Loan is a low-interest (5 percent) loan. The College decides the amount of the loan based on exceptional (extreme) financial need. *These loans must be repaid.* You have to start repaying it six (6) months after you, the borrower, are no longer enrolled in school. The starting date to repay the loan can be delayed when you meet certain circumstances: performing community service, being unemployed, or having economic hardship.

### **Leveraging Educational Assistance Partnership (LEAP)**

The Leveraging Educational Assistance Partnership (LEAP) grant program, formerly known as the Arizona State Student Incentive Grant Program (SSIG), makes grants available to students with financial need. The College decides the amount of the award based on your need and enrollment status.

### **Institutional Student Aid**

A number of campus jobs are available throughout the College. These positions are not based on financial need, and the students are selected by the employing department. Students are able to work an average of 19 1/2 hours per week. For application and placement information, you should contact any campus Job Placement Office.

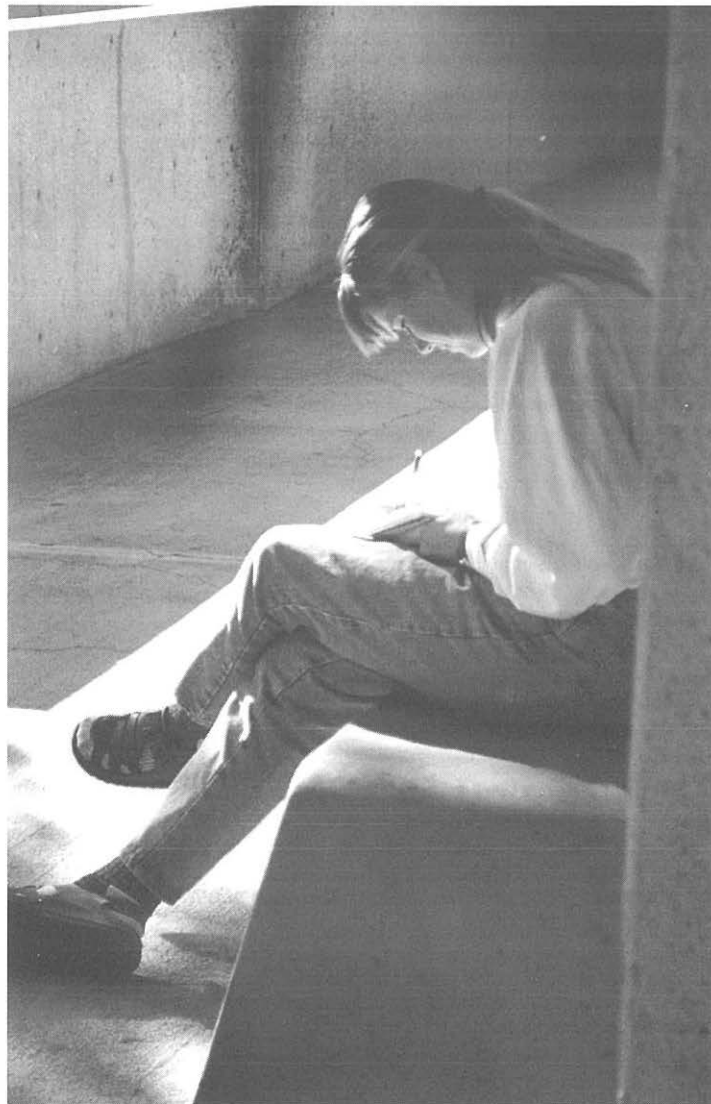
### **Short-Term Loans**

This program is intended to help you pay for tuition and books due to emergencies or funding problems. You have to pay back the loans within 30 to 60 days or by the end of the enrollment period, whichever comes first.

### **Scholarships**

A number of scholarships have been set up for students by generous private donors. The awards may be based on merit only, or a combination of financial need and merit, and on program of study. The Free Application for Federal Student Aid (FAFSA) is the form used to apply for the following scholarships. Recipients are chosen from the pool of eligible financial aid applicants.

- **William A. Barnes Memorial Scholarship**  
Eligibility criteria: Enrollment in Office Education, Automotive, Computer Science, Nursing, Construction, Construction Drafting, Pharmacy Technology, Radiologic Technology, or Respiratory Therapist Program  
Value: Amount and number of awards vary
- **Andrew P. Martin Scholarship**  
Eligibility criteria: Tucson-area high school graduate, enrollment in Air Conditioning, Automotive, Construction, Construction Drafting, Drafting Technician, Graphic Technician, Machine Tool Technician, or Welding Program  
Value: Amount and number of awards vary
- **Margaret Ernst Memorial Scholarship**  
Eligibility criteria: Promising student  
Value: Amount and number of awards vary



- Kim Fackelman Memorial Scholarship  
Eligibility criteria: Enrollment in Computer Science  
Value: Amount and number of awards vary
- Houston Health Scholarship  
Eligibility criteria: Enrollment in Dental Assisting, Dental Hygiene, Nursing, Pharmacy Technology, or Radiologic Technology  
Value: Amount and number of awards vary
- Sharon Krieg Memorial Scholarship  
Eligibility criteria: Promising students  
Value: Amount and number of awards vary
- Mary Macon Memorial Scholarship  
Eligibility criteria: Promising students  
Value: Amount and number of awards vary
- Marshall Foundation Fund--Allied Health  
Eligibility criteria: Enrollment in an Allied Health Program  
Value: Amount and number of awards vary
- Marshall Foundation Fund--Nursing  
Eligibility criteria: Female students enrolled in the Nursing Program  
Value: Amount and number of awards vary
- Andrew J. Pizzini Memorial Fund  
Eligibility criteria: Promising students  
Value: Amount and number of awards vary
- Jeffrey H. Ross Memorial Scholarship  
Eligibility criteria: Promising students  
Value: Amount and number of awards vary
- Kara Watchman Memorial Scholarship  
Eligibility criteria: Promising students  
Value: Amount and number of awards vary

#### Foundation Awards

The PCC Foundation receives funds from various donors. The availability of these funds occurs at different times during the year. Recipients are selected from a pool of eligible applicants who have completed the Free Application for Federal Student Aid (FAFSA). A separate application for these funds is not required.

- Alumni Scholarship  
Eligibility criteria: Promising students  
Applications available January-July in all Financial Aid Offices and Career Centers  
Value: Amount and number of awards vary

- Jones Intercable  
Eligibility criteria: Promising students  
Applications available January-July in all Financial Aid Offices and Career Centers  
Value: Five awards for \$500
- Intel Scholarship  
Eligibility criteria: Students enrolled in Semiconductor Manufacturing Technology  
Applications available in the West Campus Technology Department annually  
Value: To cover tuition and books; number of awards varies
- Campbell Endowment  
Eligibility criteria: Awarded to Tohono O'Odham students  
Contact Verna Throssell or Michael Enis at 206-6135  
Value: To cover tuition and books; number of awards varies
- Wynelle Knight Memorial Scholarship  
Eligibility criteria: For disabled students  
Contact any campus Disabled Student Resource Coordinator  
Value: \$250 award; number of awards varies
- Witt Memorial Scholarship  
Eligibility criteria: Continuing enrollment in the Construction Program  
Contact your construction-related faculty member for more information  
Value: \$500 award; number of awards varies

## 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, 32, and 35), and reservists (Arizona National Guard) under Title 10, Chapter 1606, must be certified through the District Veterans Office (DVO). You are encouraged to complete the required DVA procedures as early as possible through any campus Veterans Office. You must meet PCC's admissions requirements and comply with the College's Academic Standards of Progress (see the Admission, Registration, Records, and Graduation section of this catalog for a complete description) to maintain your status.

## Enrollment Certification and Limitations

Eligible persons **must** complete an enrollment certification (Pima Community College Veterans Certification Worksheet) **each** semester immediately after registration to initiate or continue receiving benefits. Continuing students are mailed a copy of their worksheet to be used during their next registration.

## Benefits

Veterans receive educational assistance based on their enrollment certification status for a certified period (i.e., full-time, three-quarter-time, half-time). In a "traditional" semester (16 or 17 weeks in length), this measure is determined by the following:

- |                      |                             |
|----------------------|-----------------------------|
| ■ Full-time          | 12 or more semester credits |
| ■ Three-quarter-time | 9–11 semester credits       |
| ■ Half-time          | 6–8 semester credits        |

Less than half-time periods are eligible for reimbursement of tuition and college fees paid by the student. Veterans on less than half-time periods are entitled to a request for "Lump Sum Payment."

Veterans at the half-time status or higher will receive a monthly benefit check. The rate of that check will vary by your status and "chapter" of eligibility. Up-to-date pay charts are maintained in the campus Veterans Offices.

Enrollment in accelerated (nonstandard semester) terms (e.g., Davis-Monthan Air Force Base courses) will have an effect on the monthly rate you will receive. Status is determined by the number of semester credits taken in a certified period (number of weeks). Combination of traditional and nonstandard courses will cause a variance in your status; therefore, there will be changes in the size of your checks.

DVA will not allow for the certification of open entry/open exit courses until a final grade (course completion) is received and posted to your student records. Combination of open entry/open exit courses with other traditional or nonstandard courses has a direct impact on your monthly entitlement and rates.

## Degree Plans

Students applying for DVA educational benefits can **only** be certified for courses they are enrolled in that are within their objective—program of study (or major). Eligible students should select a program of study (approved by the DVA) prior to registration for classes. Veterans are provided **Degree Plans** to indicate the course(s), in accordance with the applicable PCC catalog, that fit within their program. A Degree Plan is contained in the Pima Community College Veterans Certification Worksheet and is normally provided upon initial enrollment for benefits or when a program change occurs.

All degree programs are approved for a specific number of credit hours. Eligible students will not be certified or paid by the DVA for courses above and beyond the approved length. **The DVA will pay only for required courses in approved programs.** This same rule applies to certificate and vocational certificate programs which may be measured in clock hours rather than semester credits.

Veterans are limited to one program change, new Degree Plan, in a twelve-month period. A program change occurs when there is a material loss of 12 credits or more that are not transferrable to the new course of study. The DVA approves and monitors the number of program changes over the period of eligibility to ensure progress in reported goals.

## Academic Standards

DVA educational benefits will not be paid for courses unless they are used in computing graduating requirements for the selected objective. Students receiving the grade of General or Official Withdrawal in any of these courses will have to reimburse the DVA retroactive to the start of the semester, unless there are mitigating circumstances approved by the DVA. In some cases the interval pay may also be adjusted as a result of the withdrawal.

All veterans should maintain a 2.0 grade point average (GPA) for continuous certification. Veterans not making satisfactory progress or who do not maintain academic status (see "Academic Standards of Progress" in the Admissions, Registration, Records, and Graduation section) will not be certified (benefits will be suspended) until the cause for the academic disqualification has been corrected and the program of study being pursued is suited to the person's aptitudes, interests, and abilities.

## Transfer of Previously Earned Credit

DVA requires that all those students receiving educational benefits have their "prior military and/or college experience" evaluated for credit toward the objective at Pima Community College. You must have all **official** transcripts and a DD Form 214 (Military) sent to PCC for evaluation. Upon receipt, the College will evaluate the document(s) to determine what credit can be accepted at Pima. This information must then be forwarded to the DVA prior to your second semester of attendance. Failure to have this process completed during the first semester of attendance could result in overpayment and/or delay of your benefits.

## Additional Benefits

If you are eligible for DVA educational benefits and have completed the enrollment certification process, you may also apply for Tutorial and/or DVA Work-Study. These programs are available in addition to the educational benefits. To find out more information concerning eligibility for these programs and the process to obtain this assistance contact any campus Veterans Office for more information.

# Pima Community College Foundation

Public funds taken from taxes provide the basic needs for higher education, but private support is often needed to supplement those parts necessary for true academic excellence.

A community college and the community it serves are alike. As partners in service, interested citizens of the community established in 1977 an incorporated, not-for-profit organization to assist Pima Community College in its efforts to expand educational opportunities and services in the community. In addition, a foundation provides a means for citizens to participate actively in the future growth and development of their community college.

A major goal of the PCC Foundation is to raise funds and acquire equipment and supplies to go toward student scholarships, faculty creative teaching grants, and special needs of the College as determined by the Foundation Board of Directors. Scholarship information can be obtained from the College Financial Aid Offices.

An important objective of the Pima Community College Foundation is to promote the College so that individuals, business, and industry will recognize its achievements.

Meetings and special functions held each year allow members to meet and hear from students and faculty about the programs of the College.

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 206-4646.

## Foundation Officers, 1999

Steven M. Cellen, President  
Blake Down, Vice President  
Cloriza Lomeli, Secretary  
Bernie Ray, Treasurer  
Joseph E. Nevin, Executive Director  
Alex Hobson, Legal Counsel

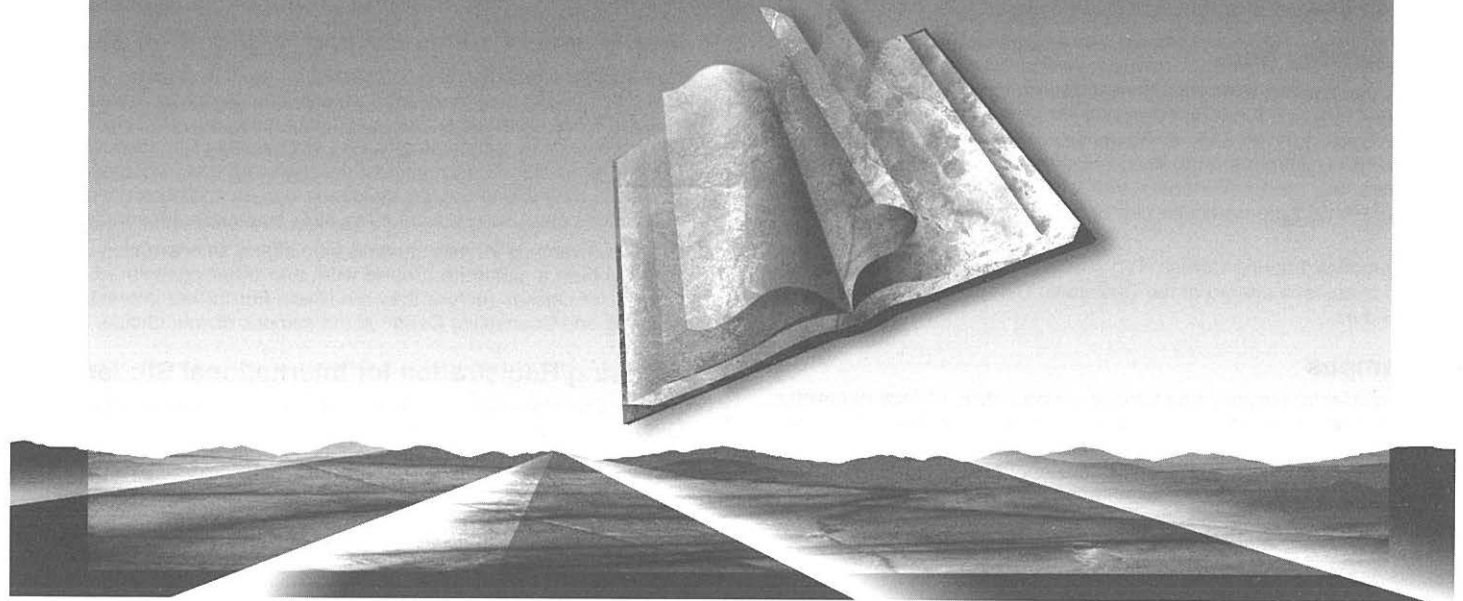


## Foundation Board of Directors

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Ruth Miller	Mark Ziska
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# Student Services



# Academic Support Centers

## Community Campus

The Community Campus provides tutoring in computer science at various times during the week. You should contact the Learning Resource Center (LRC) for more information at 206-6454.

The Community Campus also offers assessment tests in mathematics, reading, and writing. You should call or come by to schedule a time for testing. The Testing Center is located in the campus LRC.

## Desert Vista Campus

The Center for Alternative Learning provides tutoring in accounting, art, chemistry, English as a Second Language (ESL), mathematics, Spanish, and writing. Tutoring is also provided in biology and reading labs. All tutoring is on a walk-in basis.

The Testing Center offers assessments in ESL, mathematics, reading, and writing to help you in selecting the proper courses. Many instructors also use the Testing Center to administer their class tests.

## Downtown Campus

Downtown Campus has three Alternative Learning Centers: the Math Center (AMC) (206-6165), the Reading Center (ARC) (206-6110), and the Writing Center (AWC) (206-6113). Each of the centers offers a variety of alternatives to a traditional classroom format. These may include flexible schedule (with day and evening hours available), self-paced programs, and tutoring assistance. Contact the particular center for information regarding course offerings.

The Mathematics Tutoring Center (TC) provides tutoring assistance for all mathematics courses offered at the Downtown Campus. Call 206-6213 for operating hours.

## East Campus

The Tutoring Center provides free tutoring in accounting, biology, chemistry, computer science, economics, English as a Second Language (ESL), environmental technology, French, history, humanities, Japanese, mathematics, social sciences, Spanish, and writing. You may make appointments for tutoring sessions, or you may receive tutoring on a walk-in basis.

The Testing Center offers assessments in biology, chemistry, computer science, math, reading, and writing to help you in selecting the proper courses. Many instructors use the Testing Center to administer their class tests.

## West Campus

The Instructional Testing Center may be used by instructors to provide alternative testing opportunities. Extended hours of operation allow students to select testing times that accommodate personal schedules.

The Tutoring Center offers help in mathematics, writing, English as a Second Language (ESL), and science. Tutoring is available during operating hours. Call the Tutoring Center for more information.

# Advising

Advisors and counselors are available year-round at campus Advising and Counseling Centers to help you choose courses and make decisions that best meet your educational needs. Both walk-in service and appointments are available. All new students should meet with an advisor or counselor before registering and should continue to meet with an advisor, counselor, or faculty advisor at least once each semester.

## New Student Orientation and Registration Sessions

New student orientation is a component of the PCC Student Success Plan. The purpose of a new student orientation is to introduce first-time students to life at Pima Community College. Orientations provide information about programs of study, schedule planning, course selection, time management, College procedures, and university transfer options. Advisors and counselors are available to discuss academic, career, and personal choices. The orientations also briefly describe available financial aid resources.

A major advantage for new students who attend an orientation is the opportunity to plan a schedule around work and other commitments and then register for classes (before they are filled). For further information call the Advising and Counseling Center at the campus of your choice.

## Advising/Registration for International Students

If you are an international student, you must contact the International Student Office at the West Campus. International students must apply for admission and complete registration and schedule changes at that location. You need to meet with an academic advisor to select your courses for each semester.

You are required to take placement examinations to determine proper academic placement. When registering for a course, international students must meet the prerequisites or otherwise satisfy the instructor of their preparation to take the course. Prerequisites can be waived only at the discretion of the instructor or department involved.

## Interactive Video Advising (IVA)

Pima Community College utilizes a computer desktop video conferencing system, known as Interactive Video Advising (IVA). This system provides individual academic advising for students located at designated off-campus sites. The advisor or counselor and the student can see each other and can share files from their desktop computers. The IVA is available at all campuses, Davis-Monthan Air Force Base, the Nogales/Santa Cruz Education Center, and in the town of Sells. Additional on-campus and off-campus sites will be available throughout the year. The IVA system is also available to anyone using CU-SeeMe software through the Internet. For more information on the IVA system, please call (520) 206-6408.

## Assessments

### Basic Skills

To help you determine your educational needs, Pima Community College requires students to take assessment tests in mathematics, reading, and writing. These tests evaluate your current skill levels in these areas. The assessment tests are taken at the assessment center on each campus or at various Community Campus off-site locations. They are free of charge, but you must bring a photo ID and have an application for admission form on file. Authorized College personnel use the results of the assessment tests to help you select the proper courses or program of study.

If you are a new, full-time student, you are required to take the mathematics, reading, and writing assessment tests before registering for classes. The same requirement applies if you have been placed on academic alert and have not taken your assessment tests. The Admissions and Records Office notifies you of the academic alert when your grades have fallen below the College's lowest acceptable level and you have not shown progress in the number of classes completed.

If you are a part-time student, you are required to take the mathematics, reading, and writing assessment tests when you register for the first time in a class in each of those subjects.

Special accommodations for qualified disabled students, such as extended time, large print, writing assistants, and interpreters, are available through Disabled Student Resources Offices. See the Disabled Student Resources section for more information.

## Other Assessment Services

In addition to these basic skills assessment tests, Pima also offers assessment for students taking English as a Second Language (ESL) courses. It is recommended that ESL students take this assessment for placement in ESL courses.

Pima also provides resources to help you explore possible goals and your career options. The results of these tests can help counselors assist you in career or educational planning. Tests are available to help you determine your abilities, where your job interests lie, where your strengths lie, and what you have achieved.

If you do not have a high school diploma, Pima offers the General Education Development test to help you earn your GED for high school equivalency. The General Education Development test and the institutional TOEFL exam (Test of English as a Foreign Language) are available at the West Campus Assessment Center.

If you would like to earn college-level credit through testing, the CLEP (College-Level Examination Program) General Examinations tests are offered at the Downtown Campus Assessment Center. Students should check with the proper assessment center for walk-in services, individual appointments, or group sessions.

If you need special assistance to take any of these assessment tests, you can call the Disabled Student Resources Office at any Pima Community College campus.

## Career Centers

The Career Centers offer several sources of information to find out what your personal interests and strengths are and to explore careers that are available. You can research the salary ranges and future outlook for jobs in various careers. In addition, you can see what skills each job requires. The centers also provide training on how to write a résumé and look for a job. Resources are available at all five campuses.

## Counseling

Counseling services can help you in a variety of ways. The counselors can assist you in deciding on a college major and career that match your interests, skills, and personality. To help you with your studies, the counselors

can provide you with study skill techniques and strategies to control your fear of taking tests. If stress and personal troubles are keeping you from your studies, a counselor can assist you and also help you identify appropriate community agencies that might be able to assist you.

If you would like to grow in your personal and academic skills, you can enroll in a variety of Human Development Education courses. Each semester a series of courses are offered, giving you an opportunity to focus on adult life skills. Check the *Schedule of Classes* under Human Development Education (HDE) for times and locations. To see a counselor, call any of the campus Advising and Counseling Centers for an appointment.

Community Campus - 206-6408  
Desert Vista Campus - 206-5030  
Downtown Campus - 206-6298  
East Campus - 206-7662  
West Campus - 206-6600

## Department of Public Safety

The Pima Community College Department of Public Safety, a law enforcement agency with national accreditation, maintains a district-wide police and security force that is on duty year-round, 24 hours a day. Security or Department of Public Safety personnel are present at all campuses and provide support to all college locations. Each campus maintains a lost-and-found section. The department also escorts students, faculty, and staff to and from cars.

The Department of Public Safety provides annual campus crime statistics to the College community. Reports for the previous five years are mailed to currently enrolled students and employees each year. They are also available upon request from each campus Admissions Office and are also posted at various campus locations. Updates and important safety and security issues are published in the student newspaper *Aztec Press*, in the employee newsletter *Bulletin*, and through the College's Internet home page at <http://www.pima.edu>.

### Campus Police

Campus Escort	206-2700
Emergency	206-2700 or 911
Report of suspicious activity	206-2700

## Disabled Student Resources

It is the policy of Pima County Community College District to comply with the Americans with Disabilities Act (ADA) of 1990 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 qualified person will, solely by reason of disability, be denied access to, participation in, or the benefits of any program, activity, or service offered by the College.

The College will make every effort to (1) ensure that qualified individuals with a disability are provided a reasonable accommodation and (2) promote respect for the dignity and equal treatment of individuals with disabilities.

Pima Community College is committed to providing college-wide educational support assistance for students with documented disabilities. Disabled Student Resources (DSR) assists students through the developing of service plans which incorporate classroom, lab, and testing accommodations, as needed. Through the provision of accommodations, each student will have the opportunity to function to the best of his/her ability within the scope of the College's services, programs, and activities. The DSR department also refers students with disabilities to other College departments and community agencies that can enhance and support their education experience. When appropriate, services provided by DSR may include academic and career advising, priority registration, note-taking assistance, sign language interpreting, auxiliary aids and services, use of specialized equipment, taped texts, extended test times, and mobility assistance.

Student requests for accommodation due to disability are processed through DSR Offices. DSR Specialists will provide intake assistance, eligibility determination with appropriate documentation, student services plans, faculty notification of accommodation, and monitoring of student accommodations. Students with disabilities may contact any DSR Office listed below to begin a request for accommodation or continue an accommodation service plan each semester.

Community Campus	Student Development Office	206-6355 206-6513 (TTY)
Desert Vista Campus	Advising Center, Rm. A-14	206-5030 206-5016 (TTY)
Downtown Campus	Campus Center, Rm. 116	206-6128 (TTY)
East Campus	Student Union, Rm. 217	206-7699 (TTY)
West Campus	Student Center, Rm. 123	206-6688 (TTY)

## PimaInfo

The PCC Information System (PimaInfo) provides information about the College and its services. Examples include applying for admission, registering, tuition and fees, financial aid, a schedule planner, access to the library catalog, and much more.

You can gain access to PimaInfo through computers at campus libraries, campus computer centers, several Tucson–Pima County Public Libraries, the University of Arizona, or from your home or office via your personal computer and modem by dialing (520) 206-6060 (Local>c pimacc; Username: PIMAINFO).

Note: The information contained in PimaInfo is also available on the PCC Internet home page (see below).

## Pima Community College's Internet Home Page

PCC students have access to information about the College through the institution's World Wide Web home page. The site provides information on PCC's history, administration, campuses, and various departments. It also covers admissions, financial aid, international students, registration for classes, costs and payments, advising, assessments, and student responsibilities. There is also access to the class schedule for the current and upcoming semesters and to PIMALINK (the PCC library electronic catalog). In addition, there are links to World Wide Web resources. You can access PCC's home page at <http://www.pima.edu> from a computer at any campus library, campus computer centers, several Tucson–Pima County Public Libraries, the University of Arizona, or from your home or office via your personal computer and an Internet service.

## Job Placement

If you are currently enrolled or have taken a class at Pima Community College and you want to find a job, Job Placement may be able to help you. The staff can assist you in finding a job that may give you experience in your field of study. Each campus office maintains a list of part-time and full-time job

opportunities available throughout Pima's five campuses, the District Central Office, and certain off-campus sites. In addition, you can access this job list through the Pima Community College Internet home page at <http://www.pima.edu>. For more information, contact any of the campus Job Placement or Career Center Offices.

## College Libraries

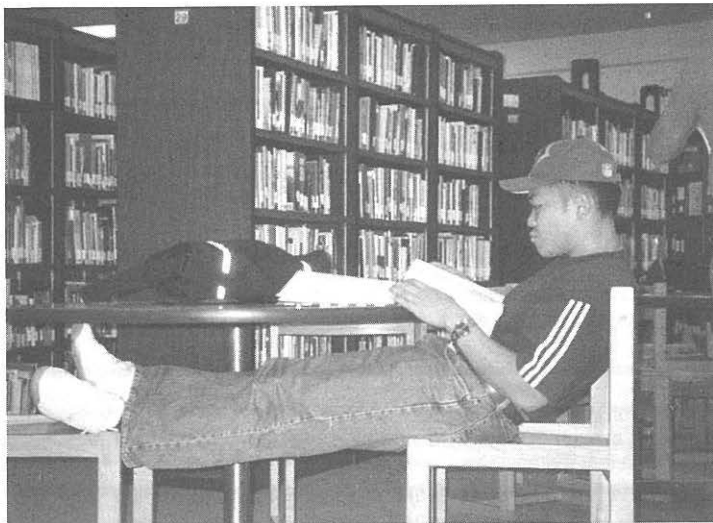
Library services for all college students, faculty, and staff members, as well as Pima County residents, are available at the Desert Vista, Downtown, East, and West campus libraries. College library resources are listed in a single computerized catalog, known as PIMALINK. The libraries also share materials by using a courier and telefacsimile (fax) services. The resources include books, journals, videos, audiotapes, compact discs, and microforms. The computer system PIMALINK is now also available on the World Wide Web (WWW) at the address <http://www.library.pima.edu>.

Library staff members are available at all libraries to answer reference questions. They also will help patrons find and use information. They can provide bibliographies, computer on-line database searching, student and faculty manuals, course reserve services, and referral to other information resources. The campus libraries may also offer library skills credit classes (LIB 100), as well as informal individual classes. To help you learn your way around the library, there are several orientation videos. Also, staff will do classroom presentations and individual help sessions.

A list of library materials is available on the on-line catalog. PIMALINK also contains various databases of journal articles. (Full-text databases are also available at the libraries. Consult the librarians to find out which databases are currently available.) Through PIMALINK, users have access to other databases, such as the University of Arizona's SABIO, the Tucson–Pima County Public Library, and the World Wide Web (WWW). The WWW is a hypertext electronic system that provides access to documents from around the world through the Internet. You can also access PIMALINK from a computer at any campus library, campus computer center, several Tucson–Pima County Public Libraries, the University of Arizona, or from your home or office via your personal computer and an Internet service or modem. However, due to licensing restrictions, some databases may not be available to off-campus computers. Ask the librarians for information on how to gain access to PIMALINK from off-campus.

If you are a Community Campus student taking courses at one of the many sites throughout the area, you are urged to use the closest campus library. Instructors often place reserve materials at these locations and sometimes





at participating public libraries. The Community Campus also now makes access available to PIMALINK and the collections of the campus libraries.

In addition, the Community Campus houses the telecourse materials. If you are enrolled in a telecourse, you may view videotapes of all telecourses at any campus library and the Davis-Monthan Air Force Base library. Since the telecourse broadcast is produced by the Community Campus, that campus has all the telecourse tapes. Due to editing, there is a delay for all live-broadcast tapes before placement in the libraries.

The Desert Vista Campus library, located in room CO1, offers a collection of over 18,000 items of print and nonprint materials. Library materials directly support classes at Desert Vista, as well as providing for personal interest. Current magazines and local/national newspapers are also available. The library features a variety of CD-ROM and on-line databases. Coin- and card-operated copy machines and a card-operated laser printer are also available.

The Downtown Campus library, located on the second floor of the Campus Center, houses a collection of approximately 32,000 items of print and nonprint materials to be used for reference, for Pima courses, and for personal interest. Current magazines and newspapers are available. To provide support for the programs at Downtown Campus, this library specializes in materials on automotive technology, welding, hospitality, and legal assistant.

The East Campus library has a collection of 31,000 items, both print and nonprint, to be used for reference, for Pima courses, and for personal interest. Magazines and newspapers are available for current information, and back issues are also available for research. Specialized collections at this library include children's literature, emergency medical services, environmental technology, and equine science. The library also has available a coin-operated copy machine, IBM and Macintosh computers, VHS video players, and typewriters.

The West Campus library, located on the third floor of the Administration/Library Building, has a collection of 161,000 items in print and nonprint. In addition, the library subscribes to 600 periodicals and maintains a large collection of back issues. The collection at West Campus is particularly strong in the areas of allied health, art, ethnic studies, law enforcement, literature, business and legal reference, and Mexican history. The library has study tables, partitioned tables with audio and other equipment, and lounge areas, providing room for over 300 students. The library also provides users with many microform reader-printers and coin- and card-operated photocopy machines.

### Who May Borrow from the Library?

If you are a Pima Community College student, you must have a College student ID card with a bar code to check out or hold library materials. To get a student ID card, contact any of the campuses for more information. If you are not a student, any campus library can issue a Special Borrower Card.

You may borrow material for three weeks. Special loan periods are available for faculty, staff, and Honors Program students.

If you have been charged and have not paid a fine for overdue library materials, you will not be able to get your grades, transcripts, or diplomas, and/or you may not be allowed to register for classes.

If you lose borrowed library materials, you must pay for them at their replacement cost plus a processing fee of \$10 per item that cannot be refunded.

## Specialized Programs

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

Earning a Degree or a Certification

internet solar power education expression access economy accounting mission online job

# Introduction

This section of the catalog contains two very important parts of your education at Pima Community College: (1) an overview of degree and/or certificate requirements and (2) the General Education requirements for degrees and certificates.

You may wonder what is the difference between a program, a degree, and a certificate. A program, which may also be called a major, is your area of interest, such as Business Administration, Nursing, or Anthropology. Each program is listed in this *College Catalog* with the courses needed to complete an associate degree or certificate. An associate degree or certificate requires that you complete all the courses identified for the program of your interest and complete the General Education requirements identified in your program's display in this catalog. An associate degree requires at least 60 college course credits, whereas a certificate can require between 9 and 59 college course credits. There are different types of associate degrees and certificates. You are encouraged to discuss your choices with an advisor or counselor at the campus of your choice.

General Education is the term used to describe a set of courses that increases your understanding of the world, how people interrelate, issues and practices in the sciences and mathematics, and the experience of the arts and humanities. It also includes courses to help you improve your communication, critical thinking, and problem-solving skills. The General Education courses are identified under that heading in each program display. Some program faculty pre-select the General Education courses, but others allow you to choose from a list of approved General Education courses, organized by subject area categories. The General Education categories with their course lists are identified in this section of the catalog.

## Degree, Certificate, and Program Requirements

Pima Community College offers degrees and certificates in a variety of disciplines. Each degree and certificate has different program requirements for graduation. Grades of "C" or better are required in core courses to fulfill graduation requirements. Core courses are designated in each college program. See the Educational Programs section of this catalog for program requirements.

**Associate Degrees** generally are granted upon the successful completion of a program, usually two years in length, which has been outlined by the College faculty and approved by the PCC Board of Governors and the

Arizona Community College Board. Details of programs offered are listed in the Educational Programs section of this catalog.

While a minimum of 60 credit hours of course work at the 100 level or higher is required to earn an associate degree at Pima, it should be noted that the completion of some programs extends beyond the 60-credit-hour minimum.

At least 15 semester hours of the total required to qualify for an associate degree must be earned at Pima Community College.

**Certificates** are awarded in many short-term study program areas. Generally, these programs do not carry the two-year (60-credit-hour) minimum for the associate degrees.

Certificates are granted upon the completion of a prescribed program curriculum of this catalog.

At least 6 semester hours of the total required to qualify for a certificate must be earned at Pima Community College.

Degree and Certificate Requirements must be met before a degree or certificate is granted.

Faculty and staff are available to help each student understand and arrange to meet these requirements, but every student is responsible for fulfilling them. If the requirements have not been satisfied at the end of the student's course of study, the degree or certificate will not be granted. For this reason, it is important for each student to complete the General Education requirements, all the courses identified for the program of your interest, and the program's reading requirement. Also, the student must keep currently informed of changes in requirements that may occur at Pima Community College. Those students who wish to transfer to a four-year institution must also keep abreast of changes in requirements at their chosen destination.

## General Education Information

### General Education Introduction

General Education provides the core of learning in all associate degree and certificate programs. It demonstrates the College's vision of an educated person and a commitment to education as a lifelong process. A student fulfills the General Education requirement by completing the General Education block of 35 credits for transfer degrees, 18 credits for direct employment degrees, and six (6) credits for certificates.

### The "Rationale for General Education" is:

*General education requires that all students gain an understanding and appreciation of themselves; their own history and culture; the history and*

*culture of the human species; the principles and impact of mathematics, science and technology; and the principles of effective communication. Through an understanding and appreciation of these elements, the students should come to a realization of the interrelationships.*

*The process of general education is also designed to develop the following thinking skills: comparing; interpreting; observing; summarizing; classifying; suggesting and testing hypotheses; imagining and creating; criticizing and evaluating; designing projects and investigations; identifying assumptions; applying principles in new situations; gathering and organizing data; and coding for certain patterns of thinking, reasoning, problem solving, and decision making.*

In order to graduate, you must complete the degree or certificate requirements, which include the completion of General Education requirements. The General Education subject areas and credit hour requirements are identified below in the Degree and Certificate Requirements and Course Lists for General Education section.

You are strongly encouraged to discuss your General Education course selections with your advisor or counselor.

## Degree and Certificate Requirements and Course Lists for General Education

### General Education Course Lists

There are two lists of General Education courses: Transfer General Education Course List and Direct Employment General Education Course List.

## College Reading Requirement

An interim policy, effective June 1998, requires that students assessing into REA 091 or below enroll in the specified reading course(s) concurrently with enrollment in General Education courses. Students testing into REA 112, although not required to, are encouraged to enroll in REA 112. Students planning to apply for admission to health-related programs or the hospitality program are required to take REA 112 or demonstrate proficiency at the 112 level.

## Transfer General Education Requirements

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

- Associate of Arts Degree (AA) for Transfer
- Associate of Business Administration Degree (ABUS)
- Associate of Science Degree (AS) for Transfer

For students planning to transfer to a university and complete a bachelor's degree, General Education is a major portion of the student's transfer program (35 or more credits of 60-64 credits). These 35 or more credits are known as the Arizona General Education Curriculum (AGEC) block. The block is designed to fulfill 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 AGEC will fulfill many other universities' General Education program, like the University of Phoenix. See your advisor or counselor.

### Arizona General Education Curriculum (AGEC)

The Arizona public community colleges and universities have agreed upon a common General Education structure for lower-division General Education (AGEC). There are three AGEC pathways: the AGEC-A for Associate of Arts degrees, the AGEC-B for the Associate of Business Administration degree, and the AGEC-S for the Associate of Science degrees. The AGEC may be substituted for the General Education requirements on any Arizona public university transfer guide.\*

If the student completes the AGEC (35 or more credits), lower-division General Education is fulfilled at all Arizona public universities. The student will not be required to take any additional lower-division General Education courses at the Arizona public universities after transfer. Undecided students can complete the AGEC without concern for which university they may choose at a later date.

If a student does not complete the AGEC, lower-division General Education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

\* University transfer guides are available in Campus Advising Centers. See an advisor.

## AGEC Categorical Requirements

Each AGECE (AGECE-A, AGECE-B, and AGECE-S) has the same categories and number of credits:

AGEC Subject Area	Credit Hours
English Composition	6
Humanities and Fine Arts (At least one course from the Art list and at least one from the Humanities/Historical Perspective list.)	6-9
Biological and Physical Sciences	8
Mathematics	3
Social and Behavioral Sciences (From at least two prefixes)	6-9
Other requirement options (select 0-6 credits from the options):	0-6
a. Oral Communication	
b. Computer Science, Critical Thinking, Logic, Mathematics or Science	
c. Second Language	
d. International and Multi-cultural Studies	
Total General Education Requirement Hours	35

The differences among the AGECE-A, AGECE-B, and AGECE-S are the mathematics and science courses required. The AGECE-A requires a minimum of college mathematics with applications (MAT 142 Topics in College Mathematics), the AGECE-B requires a minimum of brief calculus (MAT 212 Topics in Calculus), and the AGECE-S requires a minimum of calculus (MAT 220 Calculus I). A student following the AGECE-A who changes his or her major and wishes to apply the AGECE-A toward a degree program requiring the AGECE-B or AGECE-S will be required to complete the mathematics course level required in the AGECE-B or AGECE-S.

## AGEC Special Requirements

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, and/or gender awareness (C)
3. Global diversity (G)

The student may fulfill the AGECE Special Requirements by completing a course identified by an I, C, or G, respectively. An individual course satisfying a categorical requirement, i.e. English Composition, listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing and critical inquiry (I) and global diversity (G).

## AGECE-A: General Education Requirements for Associate of Arts Degree (AA) for Transfer

A minimum of 60 credit hours is required for an associate of arts degree, which includes 35 or more general education credits. See your program display for selection of courses.

## AGECE-A Categorical Requirements

For courses which fulfill the general education requirements, see the General Education Course Lists.

AGEC Subject Area	Credit Hours
English Composition	6
Humanities and Fine Arts (At least one course from the Art list and at least one from the Humanities/Historical Perspective list.)	6-9
Biological and Physical Sciences	8
Mathematics	3
Social and Behavioral Sciences (From at least two prefixes)	6-9
Other requirement options (select 0-6 credits from the options):	0-6
a. Oral Communication	
b. Computer Science, Critical Thinking, Logic, Mathematics or Science	
c. Second Language	
d. International and Multi-cultural Studies	
Total General Education Requirement Hours	35

If a student does not complete all 35 credits of the AGECE, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.



### AGEC-A Special Requirements

The AGECE-A has special requirements, identified in the course list as AGECE Special Requirements. A student is required to complete courses in the following special requirement areas:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, and/or gender awareness (C)
3. Global diversity (G)

### AGECE-A University Program Areas

The AGECE-A may be applied to liberal arts university 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 your degree plan using a university transfer guide.

### AGECE-B: General Education Requirements for the Associate of Business Administration Degree (ABUS)

A minimum of 60 credit hours, which includes 35 or more AGECE-B credits, is required for an associates degree in business. See the Associate of Business Administration program display.

### AGECE-B Categorical Requirements

For courses which fulfill the general education requirements, see the General Education Course Lists.

Subject Area	Credit Hours
English Composition	6
Humanities and Fine Arts (At least one course from the Art list and at least one from the Humanities/Historical Perspective list.)	6-9
Biological and Physical Sciences	8
Mathematics (MAT 212 or above is required.)	3
Social and Behavioral Sciences (From at least two prefixes)	6-9
Other Requirement options (select 0-6 credits from the options):	0-6
a. Oral Communication	
b. Computer Science, Critical Thinking, Logic, Mathematics, or Science	
c. Second Language	
d. International and Multi-cultural Studies	
Total General Education Hours	35

If a student does not complete all 35 credits of the AGECE, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the Course Equivalency Guide and applied depending on the degree and college.

### AGECE-B Special Requirements

The AGECE-B has special requirements, identified in the course list as AGECE Special Requirements. A student is required to complete courses in the following special requirement areas:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, and/or gender awareness (C)
3. Global diversity (G)

The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing and critical inquiry (I) and global diversity (G).

### AGECE-B University Program Areas

The AGECE-B may be applied to universities' business administration and public administration degree programs. See the Associate Degree in Business Administration (ABUS) for more information on this program and see an advisor or counselor to establish your degree plan and to be sure of the AGECE pathway.

Also, an AGECE-B fulfills the requirements for any degree accepting an AGECE-A

## AGEC-S: General Education Requirements for Associate of Science Degree (AS) for Transfer

A minimum of 60 credit hours, which includes 35 or more credits of AGECS credits, is required for an associate of science degree. See your program display for selection of courses.

### AGEC-S Categorical Requirements

For courses which fulfill the general education requirements, see the General Education Course Lists.

Subject Area	Credit Hours
English Composition	6
Humanities and Fine Arts (At least one course from the Art list and at least one from the Humanities/Historical Perspective list.)	6-9
Biological and Physical Sciences (CHM 151/152 or PHY 210/216 are required.)	8
Mathematics (MAT 220 or above is required.)	3
Social and Behavioral Sciences (From at least two prefixes)	6-9
Other Requirement options (select 0-6 credits from the options):	0-6
a. Oral Communication	
b. Computer Science, Critical Thinking, Logic, Mathematics or Science	
c. Second Language	
d. International and Multi-cultural Studies	
Total General Education Hours	35

If a student does not complete all 35 credits of the AGECS, lower-division general education is not fulfilled at all Arizona public universities. When the AGECS is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

### AGEC-S Special Requirements

The AGECS has special requirements, which are identified in the course list as AGECS Special Requirements. A student is required to complete courses in the following special requirement areas:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, and/or gender awareness (C)
3. Global diversity (G)

The student may fulfill the AGECS Special Requirement by completing a course identified by an I, C, or G, respectively. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing and critical inquiry (I) and global diversity (G).

### AGEC-S University Program Areas

The AGECS may be applied to universities' science degree programs. See the Associate of Science Degree for Transfer in this catalog and see an advisor or counselor to establish your degree plan and to be sure of the AGECS pathway.

Also, an AGECS fulfills the requirements of any degree accepting an AGECS-A or AGECS-B

## Transfer General Education Course Lists

You are strongly encouraged to discuss your general education course selections with your advisor.

### General Education (AGECS) Course Lists for AA, ABUS, and AS Degrees:

The following courses may fulfill the general education requirements for the Associate of Arts (AA), the Associate of Business Administration (ABUS), and the Associate of Science (AS) degrees. Note: The AGS degree also requires courses to be selected from this list.

A single course listed in this Transfer General Education List may be counted more than once in some cases. This is called **"double-dipping."** Below are some of the rules of double-dipping:

- **YES to double-dipping when it is between core courses and one AGECS categorical requirement.**

Some courses may fulfill both the degree core course requirement and **one AGECS categorical requirement.** For example, ANT 101 is listed in the Anthropology Associate of Arts degree display as a core course and in Transfer General Education Course List as an AGECS Social and Behavioral Sciences Categorical Requirement course. A student may use ANT 101 to fulfill both the core course requirement and the AGECS Humanities and Fine Arts Categorical Requirement. See an advisor or counselor and ask about "double-dipping."

▪ **NO to double-dipping when it is between two AGEC categorical requirements.**

A general education course which is listed in more than one **AGEC categorical requirement** may be used to satisfy only **one AGEC categorical requirement**. For example, HIS 101 is listed in two AGEC Categorical Requirements: the Humanities and Fine Arts and Social and Behavioral Sciences categories. A student may use HIS 101 to fulfill only one of the AGEC general education categories. It cannot fulfill both. See an advisor or counselor and ask about "double-dipping."

▪ **YES to double-dipping when a course fulfills more than one AGEC special requirement.**

A general education course is identified as fulfilling one or more **AGEC Special Requirements** may be used to satisfy both **special requirements**. For example, HUM 260 has an I and a C listed in the AGEC Special Requirement column indicating that HUM 260 fulfills both Intensive Writing and Cultural Diversity. A student may use HUM 260 to fulfill both. See an advisor or counselor and ask about "double-dipping."

▪ **YES to double dipping when it is between an AGEC Categorical Requirement and one or more AGEC special requirements.**

A general education course which is listed in a **AGEC categorical requirement** and is identified as fulfilling one or more **AGEC special requirements** may be used to satisfy both the **categorical requirement** and the **one or more special requirements**. For example, HUM 260 is listed as a course in Humanities and Fine Arts Categorical Requirement and also has an I and a C listed in the AGEC Special Requirement column. A student may use HUM 260 to fulfill all three requirements: the AGEC Humanities and Fine Arts Categorical Requirement, the AGEC Intensive Writing Special Requirement, and the AGEC Cultural Diversity Special Requirement. See an advisor or counselor and ask about "double-dipping."

### AGEC Special Requirements

The AGEC has special requirements, which are identified in the course list as AGEC Special Requirements. A student is required to complete courses in the following special requirement areas:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

### 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	Prereq.	AGEC Special Req.
WRT 101	Writing I	3	*	
WRT 102	Writing II	3	WRT 101	
WRT 107	Writing I for International Students	3	*	
WRT 108	Writing II for International Students	3	WRT 107	

\*For additional prerequisite information, check course section.

### AGEC Categorical Requirement:

**Humanities and Fine Arts (6-9 credits):** See your degree display to determine if six or nine credits are required from this category. Complete at least one course from the Art list and at least one course from the Humanities/Historical Perspective list.

### Art List:

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
ART 100	Basic Design	3		
ART 105	Art Appreciation	3		G
ART 110	Drawing I	3	ART 100	
ART 115	Color and Composition	3	ART 100	
ART 120	Sculptural Design	3	ART 100	
CGR 250	Computer 2D Animation:			
	Adobe After Effects	4	*	
CGR 251	Computer 3D Animation	4	CGR 122	
CGR 252	Computer Multimedia Design I	4	*	
MUS 102	Introduction to Music Theory	3		
MUS 108	Pima Jazz Band I	1	*	
MUS 109	Pima Jazz Band II	1	*	
MUS 111	Exploring Music Through Piano	3		
MUS 112	Community Jazz Band I	3	*	
MUS 113	Community Jazz Band II	3	*	
MUS 116	Philharmonic Orchestra I	1	*	
MUS 117	Philharmonic Orchestra II	1	*	
MUS 120	Concert Band I	3	*	

MUS 121	Concert Band II	3	*
MUS 125(1)	The Structure of Music I	3	*
MUS 127(1)	Aural Perception I	1	*
MUS 130	Chorale (SATB)	3	*
MUS 131	College Singers (SATB)	3	*

(1) MUS 125 and MUS 127 together are equivalent to MUS 120A at the University of Arizona.

\*For additional prerequisite information, check course section.

### Humanities List:

Course Number	Course Title	Credit Hours	AGEC		Special Req.
			Prereq.		
ANT 112	Exploring Non-Western Cultures	3			C
ANT 148	History of Indians of North America	3			C
ANT 205	Intro to Southwestern Prehistory	3			C
ANT 206	Contemporary Native Americans of the Southwest	3			C
ARC 205	Intro to Southwestern Prehistory	3			C
ART 130	Art and Culture I	3			I,G
ART 131	Art and Culture II	3			I,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 116	History of Islamic Civilizations: From the Emergence of Islam through the Classical Age	3			G
HIS 117	History of Islamic Civilizations: From the Mongol Conquest to Modern Times	3			G
HIS 122	Tohono O'odham History and Culture	3			C
HIS 124	History and Culture of the Yaqui People	3			

### AGEC Special Requirement Legend

I- Satisfies Intensive Writing Special Requirement

C- Satisfies Cultural Diversity Special Requirement

G- Satisfies Global Awareness Special Requirement

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
HIS 160	History and Peoples of Latin America I	3			I,C,G
HIS 161	History and Peoples of Latin America II	3			I,C,G
HIS 170	History and Peoples of Africa	3			G
HUM 110	Humanities I	4			I
HUM 111	Humanities II	4			I
HUM 251	Western Humanities I	3			I,G
HUM 252	Western Humanities II	3			I,G
HUM 253	Western Humanities III	3			I,C,G
HUM 260	Intercultural Perspectives	3			I,C
LIT 198	Major Literary Themes:	3		WRT 102	I
LIT 231	Introduction to Shakespeare	3		WRT 102	I
LIT 260	Major British Writers	3		WRT 102	I
LIT 261	Modern Literature	3		WRT 102	I,C,G
LIT 265	Major American Authors	3		WRT 102	I
LIT 266	World Literature: Dramatic	3		WRT 102	I,G
LIT 267	World Literature: Narrative	3		WRT 102	I,G
LIT 268	Introduction to the Literature of the Americas	3		WRT 102	I
LIT 288	Politics and the Novel	3		WRT 102	
LIT 289	Literature and Film	3		WRT 102	I
LIT 298	Themes in American Literature	3		WRT 102	I
MUS 151	Exploring Music	3			
MUS 160	Popular Music in America	3			
MUS 201	History and Literature of Music I	3		MUS 102	
MUS 202	History and Literature of Music II	3		MUS 102	
PHI 101	Introduction to Philosophy	3			
PHI 122	God, Mind, and Matter	3			
PHI 123	Philosophical Foundations of Science	3			
PHI 130	Introductory Studies in Ethics and Social Philosophy	3			
PHI 140	Philosophy of Religion	3			
REL 120	Old Testament	3			
REL 121	New Testament	3			
REL 130	Asian Religions	3			
REL 140	Philosophy of Religion	3			
REL 234	Islam	3			G
THE 140	History of Theater I	3			
THE 141	History of Theater II	3			
WRT 206	Short Story Writing	3		WRT 101, 102	

\*For additional prerequisite information, check course section.

**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	Prereq.	AGEC Special Req.
ANT 105	Humanity and the Environment	3		
AST 101(1)	Solar System	3		
AST 101LB(1)	Solar System Laboratory	1		
AST 102(2)	Stars, Galaxies, Universe	3		
AST 102LB(2)	Stars, Galaxies, Universe Lab	1		
AST 105	Life in the Universe	3		
AST 105LB	Life in the Universe Laboratory	1	*	
BIO 100	Biology Concepts	4		
BIO 105	Environmental Biology	4		
BIO 109	Natural History of the Southwest	4		
BIO 115	Wildlife of North America	4		
BIO 127	Human Nutrition and Biology	4		
BIO 156	Human Biology for Allied Health	4		
BIO 160	Introduction to Human Anatomy and Physiology	4		
BIO 181	General Biology (Majors) I	4	*	
BIO 182	General Biology (Majors) II	4	*	
BIO 183	Marine Biology	3		
BIO 184	Plant Biology	4		
BIO 201	Human Anatomy and Physiology I	4	*	
BIO 202	Human Anatomy and Physiology II	4	*	
BIO 205	Microbiology	4	*	
CHM 121	Introductory Chemistry	4		
CHM 122	Introductory Organic and Biochemistry	4	CHM 121	
CHM 130	Fundamental Chemistry	5		
CHM 140	Fundamental Organic and Biochemistry	5	*	
CHM 151	General Chemistry I	5	*	
CHM 152	General Chemistry II	5	CHM 151	
CHM 235	General Organic Chemistry I	5	CHM 152	
CHM 236	General Organic Chemistry II	5	CHM 235	
ENV 105	Humanity and the Environment	3		
GEO 101	Physical Geography: Weather and Climate	4		
GEO 102	Physical Geography: Land Forms and Oceans	4		

GLG 101	Introductory Geology I	4	
GLG 102	Introductory Geology II	4	
PHY 115	Physical Science	4	*
PHY 121	Introductory Physics I	5	*
PHY 122	Introductory Physics II	5	PHY 121
PHY 210	Introductory Mechanics	5	*
PHY 216	Introductory Electricity and Magnetism	5	*
PHY 221	Introduction to Waves and Heat	4	*

(1)AST 101 and AST 101LB must both be taken in order to transfer.

(2)AST 102 and AST 102LB must both be taken in order to transfer.

\*For additional prerequisite information, check course section.

**AGEC Categorical Requirement:**

**Mathematics (3 credits):** Complete three credits. The AGEC-A requires MAT 142 or above. The AGEC-B requires MAT 212 or above. The AGEC-S requires MAT 220 or above. See your degree display for the selection of the appropriate course.

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
BUS 205	Statistical Methods in Economics and Business	3	MAT 172	
MAT 142	Topics in College Mathematics	3	*	
MAT 151	College Algebra	4	*	
MAT 167	Introductory Statistics	3	*	
MAT 172	Finite Mathematics	3	MAT 151	
MAT 182	Trigonometry	3	*	
MAT 187	Precalculus	5	*	
MAT 212	Topics in Calculus	3	MAT 151	
MAT 220	Calculus I	5	*	
MAT 227	Discrete Mathematics in Computer Science	3-4	MAT 151	
MAT 231	Calculus II	4	MAT 220	
MAT 241	Calculus III	4	MAT 231	
MAT 252	Introduction to Linear Algebra	3	*	
MAT 262	Differential Equations	3	MAT 231	

\*For additional prerequisite information, check course section.

**AGEC Special Requirement Legend**

I- Satisfies Intensive Writing Special Requirement

C- Satisfies Cultural Diversity Special Requirement

G- Satisfies Global Awareness Special Requirement



### AGEC Categorical Requirement:

**Social and Behavioral Sciences (6-9 credits):** See your degree display to determine if six or nine credits are required from this category. Courses must be completed in at least two subject areas (at least two prefixes). See your degree display for the selection of the courses.

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
AIS 101	Introduction to American Indian Studies I	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		C
ANT 112	Exploring Non-Western Cultures	3		
ANT 127	History and Culture of the Mexican-American in the Southwest	3		C
ANT 202	Sex, Gender, and Culture	3		C
ANT 205	Introduction to Southwestern Prehistory	3		C
ANT 206	Contemporary Native Americans of the Southwest	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
ECN 200	Basic Economic Principles	3	MAT 092	
ECN 201	Microeconomic Principles	3	MAT 092	
ECN 202	Macroeconomic Principles	3	MAT 092	
GEO 103	Cultural Geography	4		G
HIS 101	Introduction to Western Civilization I	3		I,G
HIS 102	Introduction to Western Civilization II	3		I,G
HIS 105	Intro to Chicano Studies I	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		C

#### AGEC Special Requirement Legend

I- Satisfies Intensive Writing Special Requirement  
C- Satisfies Cultural Diversity Special Requirement  
G- Satisfies Global Awareness Special Requirement

HIS 124	History and Culture of the Yaqui People	3		C
HIS 127	History and 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 148	History of Indians of North America	3		C
HIS 150	Afro-American History and Peoples	3		C
HIS 160	History and Peoples of Latin America I	3		I,C,G
HIS 161	History and Peoples of Latin America II	3		I,C,G
HIS 170	History and Peoples of Africa	3		G
HIS 180	Women in Western History	3		C
HUM 260	Intercultural Perspectives	3		I,C
MEC 102	Survey of Media Communications	3		
PHI 101	Introduction to Philosophy	3		
PHI 130	Introductory Studies in Ethics and Social Philosophy	3		
PHI 140	Philosophy of Religion	3		
POS 100	Introduction to Politics	3		
POS 110	American National Government and Politics	3		
POS 120	Introduction to International Relations	3		G
POS 130	American State and Local Governments and Politics	3		
POS 140	Introduction to Comparative Politics	3		G
POS 160	Introduction to Political Ideas	3		
POS 220	National and State Constitutions	3		
PSY 100A-B	Psychology I/Psychology II	3/3		
PSY 101	Introduction to Psychology	4		
PSY 216	Psychology of Gender	3	*	C
PSY 218	Health Psychology	3	*	
PSY 230	Psychological Measurements and Statistics	3	*	
PSY 250	Introduction to Social Psychology	3	*	
PSY 265	Normal Personality I	3	*	
REL 120	Old Testament	3		

REL 121	New Testament	3		
REL 140	Philosophy of Religion	3		
REL 200	Religion in Popular Culture	3		
REL 234	Islam	3		G
SOC 101	Introduction to Sociology	3		
SOC 103	Explorations in Prejudice	3	SOC 101	C
SOC 120	Current United States Social Problems	3	SOC 101	C
SOC 201	Minority Relations and Urban Society	3		C
SOC 204	Women in Society	3		C
SSE 110	Introduction to Social Welfare	3		

\*For Additional Prerequisite information, check course section.

### AGEC Categorical Requirement:

**Other Requirement options (0-6 credits):** See your degree display to determine if zero or six credits are required from this category. See your degree display for the selection of the courses.

#### (a) Oral Communication:

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
SPE 102	Introto Oral Communication	3		C
SPE 110	Public Speaking	3		C
SPE 120	Business and Professional Communication	3		C,G
SPE 130	Small Group Discussion	3		
SPE 136	Oral Interpretation of Literature	3		

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

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
ANT 102	Introduction to Cultural Anthropology and Linguistics	3		G
CSC 100	Introduction to Computers and Information Systems	3	*	
CSC 140	FORTTRAN Programming	3	*	
CSC 160	COBOL Programming	3	*	

FSN 154	Nutrition	3		
GLG 110	Environmental Geology and Natural Hazards	3	*	
MAT	Any Mathematics course numbered 142 or above			
PHI 120	Introduction to Logic	3		
PHI 123	Philosophical Foundations of Science	3		
PHY 230	Introduction to Modern Physics	3	*	
POS 100	Introduction to Politics	3		
Science	Any Science course listed under Biological and Physical Sciences			

\*For additional prerequisite information, check course section.

#### (c) Second Language:

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
FRE 110	Elementary French I	4		
FRE 111	Elementary French II	4	FRE 110	
FRE 210	Intermediate French I	4	*	G
FRE 211	Intermediate French II	4	FRE 210	G
GER 110	Elementary German I	4		
GER 111	Elementary German II	4	*	
GER 210	Intermediate German I	4	*	G
GER 211	Intermediate German II	4	GER 210	G
ITA 110	Elementary Italian I	4		
ITA 111	Elementary Italian II	4	ITA 110	
ITA 210	Intermediate Italian I	4	ITA 111	G
ITA 211	Intermediate Italian II	4	ITA 210	G
JPN 110	Elementary Japanese	5		
JPN 111	Elementary Japanese II	5	JPN 110	
JPN 210	Intermediate Japanese I	5	JPN 111	G
JPN 211	Intermediate Japanese II	5	JPN 210	G
RUS 110	Elementary Russian I	4		
RUS 111	Elementary Russian II	4	RUS 110	
RUS 210	Intermediate Russian I	4	*	G
RUS 211	Intermediate Russian II	4	RUS 210	G
SLG 101	American Sign Language I	4		

#### AGEC Special Requirement Legend

I- Satisfies Intensive Writing Special Requirement

C- Satisfies Cultural Diversity Special Requirement

G- Satisfies Global Awareness Special Requirement

SLG 102	American Sign Language II	4	SLG 101	
SLG 201	American Sign Language III	4	SLG 102	
SLG 202	American Sign Language IV	4	SLG 201	
SPA 110	Elementary Spanish I	4		
SPA 111	Elementary Spanish II	4	*	
SPA 201	Spanish for Native Speakers I	4	*	G
SPA 202	Spanish for Native Speakers II	4	SPA 201	G
SPA 210	Intermediate Spanish I	4	*	G
SPA 211	Intermediate Spanish II	4	SPA 210	G

\*For additional prerequisite information, check course section.

#### (d) International and Multi-Cultural Studies:

Course Number	Course Title	Credit Hours	Prereq.	AGEC Special Req.
ANT 102	Introduction to Cultural Anthropology and Linguistics	3		G
ANT 112	Exploring Non-Western Cultures	3		C
ANT 127	History and Culture of the Mexican-American in the Southwest	3		C
ANT 146	Culture & Personality of Mexican American	3		C
ANT 202	Sex, Gender, and Culture	3		C
ANT 205	Intro to Southwestern Prehistory	3		C
ANT 206	Contemporary Native Americans of the Southwest	3		C
ARC 205	Introduction to Southwestern Prehistory	3		C
BUS 210	International Business	3		G
FRE 210	Intermediate French I	4	*	G
FRE 211	Intermediate French II	4	FRE 210	G
GER 210	Intermediate German I	4	*	G
GER 211	Intermediate German II	4	*	G
HIS 101	Intro to Western Civilization I	3		I,G
HIS 102	Intro to Western Civilization II	3		I,G
HIS 105	Intro to Chicano Studies I	3		I,C,G
HIS 113	Chinese Civilization	3		G
HIS 114	Japanese Civilization	3		G

#### AGEC Special Requirement Legend

I- Satisfies Intensive Writing Special Requirement

C- Satisfies Cultural Diversity Special Requirement

G- Satisfies Global Awareness Special Requirement

HIS 115	Civilization of India	3		G
HIS 116	History of Islamic Civilizations: From the Emergence of Islam through the Classical Age	3		G
HIS 117	History of Islamic Civilizations: From the Mongol Conquest to Modern Times	3		G
HIS 122	Tohono O'Odham History and Culture	3		C
HIS 124	History and Culture of the Yaqui People	3		C
HIS 127	History and Culture of the Mexican-American in the Southwest	3		I,C,G
HIS 148	History of Indians of North America	3		C
HIS 160	History and Peoples of Latin America I	3		I,C,G
HIS 161	History and Peoples of Latin America II	3		I,C,G
HIS 170	History and Peoples of Africa	3		G
HIS 180	Women in Western History	3		C
HIS 190	History of the American West	3		C
HUM 260	Intercultural Perspectives	3		I,C
ITA 210	Intermediate Italian I	4	ITA 111	G
ITA 211	Intermediate Italian II	4	ITA 210	G
JPN 210	Intermediate Japanese I	5	JPN 111	G
JPN 211	Intermediate Japanese II	5	JPN 210	G
LIT 266	World Literature: Dramatic	3	WRT 102	I,G
LIT 267	World Literature: Narrative	3	WRT 102	I,G
POS 120	Intro to International Relations	3		G
POS 140	Intro to Comparative Politics	3		G
POS 230	Minority Groups & the Political Process	3		C
REL 119	Western Religions	3		G
REL 130	Asian Religions	3		G
REL 234	Islam	3		G
REL 275	Native American Worldview	3		C
RUS 210	Intermediate Russian I	4	*	G
RUS 211	Intermediate Russian II	4	RUS 210	G
SOC 103	Explorations in Prejudice	3	SOC 101	C
SOC 110	Introduction to Cities and Community Planning	3		G
SOC 120	Current U.S. Social Problems	3	SOC 101	C
SOC 201	Minority Relations and Urban Society	3		C

SOC 204	Women in Society	3		C
SPA 201	Spanish for Native Speakers I	4	*	G
SPA 202	Spanish for Native Speakers II	4	SPA 201	G
SPA 210	Intermediate Spanish I	4	*	G
SPA 211	Intermediate Spanish II	4	SPA 210	G
YAQ 110	Elementary Yaqui I	4		G
YAQ 111	Elementary Yaqui II	4		G

\*For additional prerequisite information, check course section.

## General Education for Direct Employment

### General Education Requirements for the Associate of Applied Arts Degree (AAA), the Associate of Applied Science Degree (AAS), and Certificates

This section of general education requirements includes the following degrees:

Associate of Applied Arts Degree (AAA)

Associate of Applied Science Degree (AAS)

#### Requirements for AAA and AAS degrees

For an Associate of Applied Arts Degree (AAA) or an Associate of Applied Science Degree (AAS), a student must complete the general education requirements specified in the general education course chart below. Please note that some certificate and degree programs may require specific general education courses. These courses are listed in the program displays, as shown in the "Educational Programs" section of this catalog. The categories and credits required for AAA or AAS degrees are listed in the chart below:

Categories	AAA/AAS Credit Hours
Communication	6
Analysis and Critical Thinking	6
Global Awareness	6
Computer Literacy	0-3
Total General Education Hours	18-21

### General Education Requirements for Certificates

The categories and credits required for certificates are listed in the chart below:

Categories	Credit Hours
Communication	3
Analysis and Critical Thinking	3
Total General Education Hours	6

#### Communication

6 credits

The goal of the communication requirement is to enhance the student's ability to communicate through both written and spoken language. These skills are essential for employment success.

Courses, which include written and oral communication, enhance the student's ability to demonstrate analytical thinking, target the appropriate audience, and follow the conventions of effective workplace communication.

Strategies to meet this requirement include an approved sequence of two courses which provide these skills.

#### Approved Sequence:

ASC 151/ASC 251

MEC 101/SPE 120

SPE 102/WRT 154

SPE 120/WRT 154

WRT 101/102 or 107/108\*

\*As an exception, Writing 101 and 102 (WRT 107/108) may meet this requirement to accommodate students who choose the transfer route.

#### Analysis and Critical Thinking

6 credits

Critical thinking, mathematics, and science provide a foundation for the individual and group decision making required by contemporary work environments. Mathematics competency is required and may be met by either a course or assessment. The strategies to demonstrate competence include (a) a "MAT" course at or above the 100 level, (b) an approved course with another prefix which meets the criteria, or (c) a satisfactory score on the COMPASS assessment. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category.

At least one course must be taken in either science (principles and concepts through direct experience with the scientific method) or critical thinking (emphasis on thinking, problem solving, and decision making techniques and procedures).

**Mathematics**

Any MAT course at the 100 level or higher (except MAT 198)

TEC 113

**Science**

Any AGECECategorical requirement from the Biological and Physical Science list

MAC 275

**Critical Thinking**

PHI 120

**Global Awareness**

**6 credits**

Studies in ethics and leadership, humanities and fine arts, and social and behavioral sciences contribute to success in a multicultural, global business community.

A course must be taken from at least two of the categories and one of the courses must contain cultural diversity criteria. Any course on the AGECECategorical requirement lists with a C or G designation meets the cultural diversity requirement.

Humanities and Fine Arts

Any AGECECategorical requirement from the Art list

Any AGECECategorical requirement from the Humanities/Historical Perspective list

Any AGECECategorical requirement from the Other Requirement Options:

(c) Second Language list

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

Social and Behavioral Sciences

Any AGECECategorical requirement from the Social and Behavioral Sciences list

Any AGECECategorical requirement from the Other Requirement Options:

(d) International and Multi-Cultural studies list

Leadership and Ethics (Any course in this category meets the cultural diversity requirement.

HDE 170

**Computer Literacy**

**0-3 credits**

Today's workplace requires computer competency.

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

A program core course that is also listed in the general education requirements

list may fulfill both the core course requirement and **one** general education course requirement.

A general education course that is listed in more than one general education category may be applied to only **one** general education category.

**Requirements for Associate of General Studies Degree (AGS)**

For an Associate of General Studies Degree, a student must complete the general education requirements specified in the chart below and the degree requirements for a minimum of 60 credit hours. **See the General Education Course Lists for Associate of Arts Degree for Transfer and Associate of Science Degree for Transfer for courses which fulfill the requirements.**

**Subject Area****Credit Hours**

English Composition and/or Other Requirements-

Oral Communications

3-6\*

Humanities and Fine Arts

3-6\*

Biological and Physical Sciences and/or Mathematics

3-6\*

Social and Behavioral Sciences

3-6\*

Total General Education Hours

18\*\*

\* Students must take a minimum of 3 credits in each category and at least 6 in two categories of the student's choice, for a total of 18 credit hours in general education.

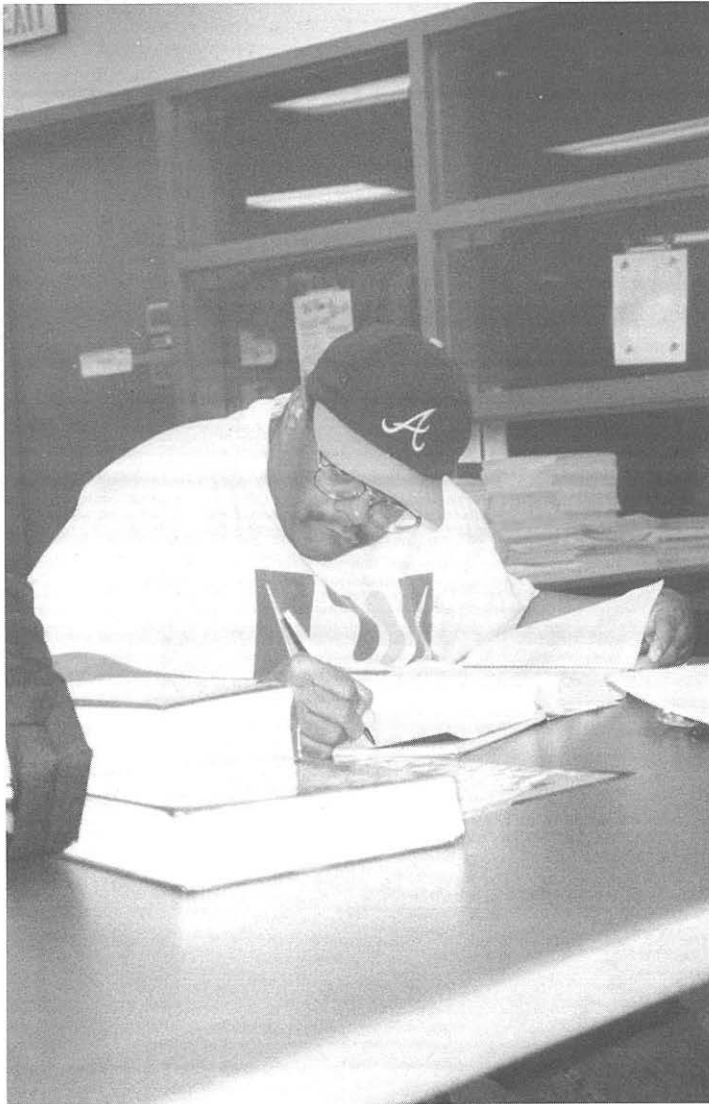
\*\*Note: A minimum of 60 credit hours is required to complete the AGS degree.



# Educational Options

resource recycling modem rgb html genetic  
atmospheric regeneration upgrade world  
archaeology opportunity enrichment vision  
learning experience collaboration education  
accessible goals development public  
mathematics telescope webcam preservation  
dvd hubble telescope wildlife leadership  
millennium domain exploration leadership  
gigabyte deep-sea value global marketplace  
e-mail individual access mission digital  
expression southwest mac os mission digital  
affordable education mac os mission digital  
diversity search engine knowledge doing  
economy firewire multitasking unix nt real ecology  
browsers multimedia micro firewire excellence heritage

economics accounting mission online jpg digital archaeology  
fuel hydroponics e-mail resource recycling rgb html genetic  
regeneration modern upgrade world wide web humanity  
excellence diversity search engine knowledge debug  
learning experience heritage enrichment vision download  
collaboration mac os achievement creativity grade  
education individual value global marketplace  
collaboration domain wildlife preservation functional space  
output input workflow raid anthropology megapixel unix  
freeware cloning gps ecology gigabyte multitasking opportunity  
responsibility software browsers windows multimedia hard drive macro  
web page success interpolated future quantum mechanics millennium



## Introduction

To meet the diverse needs of our students, Pima Community College offers a variety of ways to complete your education. You can take traditional, alternative-style, or accelerated classes. These classes cover many subject areas and fulfill degree and certificate requirements. You can take classes to help you transfer to a four-year institution, get job training, or continue your education by taking a class in a special interest area.

Pima provides these classes during the day, evenings, and weekends. Evening classes begin at 5 p.m. and later and are highlighted in the *Schedule of Classes*. You can attend them at any of the five Pima campuses and at more than 145 off-campus sites, including Davis-Monthan Air Force Base, Raytheon Missile Systems plant site, public schools, and neighborhood centers in Tucson, Green Valley, Nogales, and Sells.

## Traditional-Style Classes

Pima Community College offers traditional-style classes in which students are required to attend lecture and/or lab on specified days and times throughout the 16-week fall and spring semesters.

## Alternative-Style Classes

### Cooperative Education

Pima realizes that actual work experience can be an important part of your learning. Therefore, the College's Cooperative Education Program is available to provide students with credit for career-related work experience that adds to their academic studies. To see if the cooperative education experience is available in your program area, check with the program faculty.

If you join the Cooperative Education Program, you are assigned a Cooperative Education instructor who works with you one-on-one and offers help in finding a job, preparing for a career, and improving (upgrading) skills with which to get a job. The first time you register for Cooperative Education, you are required to take the one-credit-hour Coop Related Class. The content and design of this class are decided upon by the instructor and are based on what you need and the program requires.

You may also receive one semester hour of credit for each 75 hours of verified, on-the-job training. However, your program of study's requirements may limit how many Cooperative Education college credits apply toward a certificate or degree. If you are enrolled in courses at Pima and working part-time, you can apply a maximum of 12 Cooperative Education credits toward graduation.

## Flex Classes

Flex classes are individualized courses in areas such as business information technology, computer, and office careers. You have your own instructor who guides you through the required classwork at your own pace—you may work quickly and finish in a few weeks, or you may go more slowly. Once you have enrolled, you arrange your work and study hours with your instructor. A variety of subjects are offered in this format. Currently, these classes are held at the Desert Vista Campus. Please check the *Schedule of Classes* for specific courses.

## Independent Learning Courses

These classes are available for you to pursue your studies without having to attend class at a set time and place. You will work with your faculty member and use tapes, independent learning materials, open-lab testing facilities, and other means by which to learn. Since the available independent learning courses correspond directly with the currently offered telecourses, you may also wish to view the tapes of the telecourse broadcasts. Tapes may also be viewed at any Pima Community College Library or at the Community Campus.

In addition to the regular tuition cost, you will be charged a \$5 per credit hour fee to help defray the production and distribution expenses.

You complete your assignments at home and then mail or deliver them to the Community Campus Learning Resource Center at 401 North Bonita Ave. You can complete lab assignments at home or in the Community Campus computer lab.

For more information on independent learning courses, see an advisor or counselor.

## Interactive TV Courses

The College offers classes that are held simultaneously at multiple locations, connected by an interactive television link. For these "interactive TV" courses, you may be at a different location than your instructor and some of your classmates. However, using an interactive hookup, you, your instructor, and your classmates will be able to see, hear, and talk with each other. For more information, call (520) 206-3933 or see an advisor or counselor.

## Internet Courses

Pima offers NetLearning classes using the World Wide Web to present general class information and other instruction. You will communicate privately with the instructor and your classmates by e-mail, while listserves, chat groups, or video conferencing will be used for group discussions. An introductory session to meet your instructor will be held at the beginning of the semester. You may need to take your exams at one of the campuses, unless you make other arrangements with your instructor.

To participate in on-line classes, you will need a home computer connected to an Internet service provider, or you may use the open computer labs at any of the campuses.

## Open Entry/Open Exit Classes

These classes allow you to enroll at any time during the semester and to complete the required work within the academic year. For specific course information, see the *Schedule of Classes*.

## Regular Weekend Classes

To provide you with more options of when you can attend school, Pima has many classes that meet on the weekends. Regular weekend classes meet on Fridays, Saturdays, and/or Sundays throughout the regular semester.

## Self-Paced Classes

Self-paced classes are an alternative to regularly scheduled classes and are taught using various formats. You should meet with an advisor or counselor to see if these unique classes will meet your needs.

Note: Although course work is self-paced, enrollment must take place at the beginning of the regular semester.

## Telecourses

Telecourses are classes presented on cable television in a documentary or lecture format. These classes can be used for course requirements and transfer.

You may register for a telecourse at any campus or by telephone (MAX 2000), if eligible. In addition to the regular tuition cost, you will be charged a \$5 per credit hour fee to help defray the production and distribution expenses.

You complete your assignments at home and then mail or deliver them to the Community Campus Learning Resource Center (Telecourse Office) at 401 North Bonita Ave. You can complete lab assignments at home or in the Community Campus computer lab.

For more information, see an advisor or counselor or call (520) 206-6454.

## Accelerated Class Options

Accelerated classes are full-credit classes that last from one day to ten weeks. They are designed to help you reach your goal quicker. As these classes are of various lengths, their starting and ending dates differ from the traditional 16-week-semester classes. Accelerated classes require the same amount of work, only in a short period of time.

### Accelerated Weekend Classes

To provide you with more options of when you can attend school, Pima has many classes that meet on the weekends. Accelerated weekend classes meet for one or more weekends. They provide you opportunities to earn credits quickly. For example, you can earn an Associate of Arts Degree for Transfer in Liberal Arts by taking only weekend courses at the Pima Community College site at Davis-Monthan Air Force Base. The material is presented at a fast rate. The accelerated pace allows you to complete the total number of required classroom hours.

### Eight- to Ten-Week Classes

These classes are short-term credit courses designed to include all traditional content and requirements in less than 16 weeks (the length of a regular semester). These include 8-week classes, 8-week telecourses, and summer sessions (see "Summer School Program" later in this section). Pima's office at Davis-Monthan Air Force Base conducts five 8-week sessions per year. For specific course information, check the *Schedule of Classes* or see an advisor or counselor at any campus.

### Holiday Session Classes

During the holiday session, Pima Community College offers classes in a three-week format during the winter break. These classes are considered part of the spring semester, and overload approval is available if you also plan on registering for regular spring semester classes. Holiday session classes fulfill Pima certificate and degree program course requirements. For more information, including if these classes will transfer to the college or university of your choice, see an advisor or counselor at any campus.

## Bilingual Education

### Office for Academic and Multicultural Programs

The Office for Academic and Multicultural Programs supports activities that focus on priorities outlined in College policy and regulation. These policies address access, equity, and institutional climate conducive to ethnic minority student recruitment, retention, and success. The Office for Academic and Multicultural Programs works with instructional programs and services to ensure enrollments match the percentage of minorities within the community. The office also works to increase the number of students in all disciplines who graduate and/or transfer to four-year institutions.

### Bilingual Courses

Pima Community College offers students a unique educational opportunity through bilingual courses—classes taught in more than one language. These courses serve students with a variety of backgrounds and needs.

Bilingual courses are taught in English with assistance in Spanish. Instructors who speak both languages help students understand and learn by using English and Spanish in presenting class material, answering questions, or providing assistance.

### Cursos Bilingües

El colegio ofrece una variedad de cursos usando inglés y español como base de instrucción para personas que ya hablan español y desean un enfoque bilingüe/bicultural.

Se ofrecen clases bilingües de secretariado, pedagogía, arte, psicología, matemáticas, bailes folklóricos, español para nativos, historia, biología, etc.

### English as a Second Language Students

If you are a student with limited English skills, bilingual courses make it possible for you to begin credit work in a subject that interests you. Please be aware that since there are only a limited number of bilingual courses offered each semester, you will still need to take English as a Second Language (ESL) classes while you are taking bilingual courses. A vast majority of classes at Pima Community College are taught only in English. Therefore, it is most important for students to take ESL classes as well as reading and writing courses to attain proficiency in English.

### Los estudiantes que estudian inglés

Porque la gran mayoría de cursos que ofrece el colegio son en inglés, se recomienda que los estudiantes tomen cursos de inglés para recibir un certificado o diploma del Colegio Pima or para transferir a nivel universitario.

### Developing Skills in Spanish

If you are an English-speaking student, the variety of bilingual courses offered in Spanish and English provides you an opportunity to gain new skills. You can learn new vocabulary and attain awareness of other cultures by enrolling in bilingual courses. These courses are offered in study areas such as administrative support careers (office education) and business administration. You can get more information on offered bilingual courses by meeting with an advisor or counselor and by reading the *Schedule of Classes*.

### Los estudiantes que desean destrezas en español

La variedad de cursos que se ofrecen en una forma bilingüe dan destrezas lingüísticas y conocimientos culturales adicionales a estudiantes que se inscriben en cursos bilingües.

## The Pima Community College Honors Program

Pima Community College supports students who are highly motivated and who would benefit from an enhanced curriculum. The Honors Program serves this group of students. The program encourages its students to develop their practice of scholarly inquiry, critical reflection, and collaboration.

Overall, the intent of the Honors Program is to bring together highly motivated students, outstanding instructors, and an intensified approach to the traditional academic or occupational disciplines.

Honors Program students are required to complete HON 101 plus 12 additional Honors credits. Successful completion of the Honors Program is shown on the student's diploma upon graduation from Pima Community College.

### Admission Requirements

Students must meet one of the criteria below:

#### Incoming Freshmen

- A high school GPA of at least 3.5 and membership in the Honor Society at the student's high school.
- Advanced Placement (AP) credit and a GPA of at least 3.5.
- ACT score of 29 or an SAT score of 1290.
- A high school GPA of 3.5 and placement into WRT 101 and REA 112.





### Continuing and Transfer Students

- A GPA of 3.5 for all courses 100 level and above *and* a minimum of twelve credits completed at or above the 100 level.
- A GPA of 3.5 and placement into WRT 101 and REA 112.

Note: The University of Arizona Honors Center requires a 3.7 GPA of community college students who transfer to the UA Honors Program.

You can obtain applications for the Honors Program from the Community Campus, Downtown Campus, and East Campus Counseling Centers, from the West Campus Career Center, from the Desert Vista Campus Faculty Advisor's Office, or from any campus Office of the Dean of Student Development.

In addition to the Honors Program, the College offers you the opportunity to join Phi Theta Kappa, the international honor society for two-year colleges. Phi Theta Kappa membership is given only by invitation. See a campus Phi Theta Kappa representative for more details on how you may qualify. The name of the Phi Theta Kappa campus advisor can be obtained from any campus Office of the Dean of Student Development.

## International/Intercultural Education

By virtue of its mixed cultural heritage and its proximity to Mexico, the Tucson area is an international/intercultural community. Thus, the need for international/intercultural education is recognized by the College.

To respond to this need, the College provides courses that promote an international awareness. They teach skills in a variety of languages and cultures. The College offers training through a curriculum focused on international trade and community development, cultural exchange, and enrichment opportunities for all students.

The College offers courses that have been modified to include international studies content. These courses, in addition to the regular subject material outlined in the course descriptions in this catalog, contain material to help students understand their content on an international level. Students who take these courses can expect to gain a better understanding of other cultures and to obtain better information about international events which affect their daily lives.

Students interested in classes with an international content should consult the *Schedule of Classes* each semester.

For students who would like to concentrate on international studies, the College offers an associate degree in International Business Studies. For more details on this program of study, please refer to the Educational Programs section of this catalog and see an advisor or counselor.

## Military Service Members Opportunity College

Pima Community College has been named an institutional member of Service Members Opportunity Colleges (SMOC). The SMOC is a group of over 400 colleges and universities that willingly provide postsecondary (after high school) education to members of the military throughout the world. As a member of SMOC, Pima recognizes the unique nature of the military lifestyle. Therefore, the College is committed to making it easier to transfer relevant course credits. In addition, Pima has flexible requirements when deciding residency (where the student lives) for members of the military.

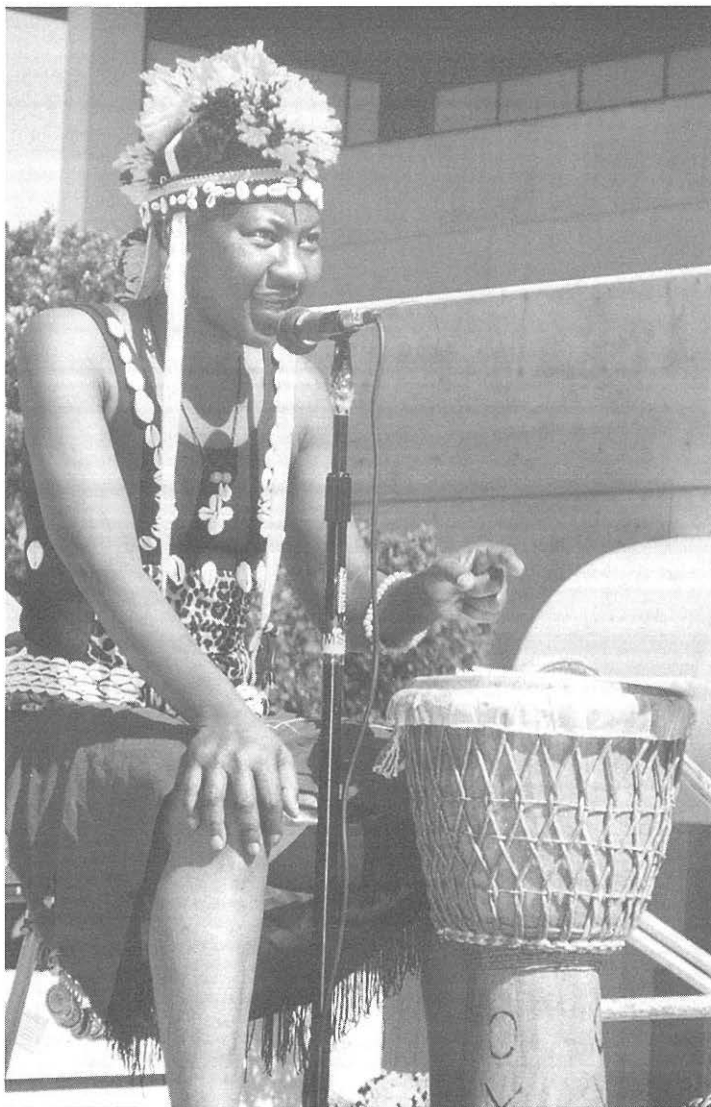
The SMOC has been formed by educational representatives of each of the armed services, the Office of the Secretary of Defense, and a group of thirteen leading national higher education associations. SMOC is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community Colleges (AACC). For information about Department of Veterans Affairs (DVA) educational assistance, please see the Financial Assistance section of this catalog.

## Summer School Program

At Pima Community College, you have the opportunity to continue your studies in the summer. You may take classes during any of the three sessions, two of which begin in late May and one in early July. The sessions usually run for five, eight, and ten weeks. See the Academic Calendar in this catalog for dates of the summer sessions of 2000.

## Student Activities and Life





## Introduction

Pima Community College offers a rewarding environment for its students. They can 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, to establish contacts within the PCC and Tucson community, and to be a voice within the College. Information on student government, student clubs and organizations, and cultural events can be obtained by consulting the Offices of Student Activities or Student Development on any campus.

## Intercollegiate Athletics, Intramural, and Recreation Sports

Pima Community College offers physical education classes and several athletic and campus recreation programs to meet a variety of student interests. Physical education classes are handled by the Fitness, Sport Sciences, and Athletics Division located at West Campus. The Athletic Department oversees the well-rounded intercollegiate athletics, intramural, and campus recreation programs. For more complete details on any of these, contact the Athletics Office on the second floor of the West Campus gymnasium.

### Intercollegiate Athletics

Pima 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 play (eligibility requirements). The basic requirements are that the athletes be full-time enrolled students, that they are making progress in their studies (satisfactory academic progress), and that each person has received a medical clearance to participate. Pima competes in a variety of sports, including soccer (men and women), cross-country (men and women), basketball (men and women), tennis (men and women), track (men and women), baseball (men), volleyball (women), golf (men), and softball (women).

### Intramural Sports

Any member of the College—students, faculty, and staff—may participate in intramural activities. These sports are geared toward individual and team com-

petition. Many activities are available and others are developed when enough interest is shown. Activities may include basketball, badminton, flag football, golf, tennis, volleyball, racquetball, and several two-mile cross-country runs.

### **Recreation Sports**

Pima also has several club recreation sports. Current and active club sports include karate, ice hockey, rodeo (men and women), tae kwon do, judo, indoor track, marathon, volleyball (men), wrestling, and Los Dorados (Sundays).

## **Emissions Control Compliance**

In accordance with A.R.S. 15-1444C, 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. Therefore, if you are an out-of-county or out-of-state student, when you register you are required to sign an affidavit that states your vehicle meets the Arizona emission standards. If your vehicle is not on record as complying, it is subject to being towed at the owner's expense.

## **Health Services**

Though Pima Community College does not have a formal student health center, first aid is available at PCC's Department of Public Safety (campus police) offices located on all five campuses. The campus police can be contacted at 206-2700, and in the case of an emergency, call 911. Accident insurance is provided under a blanket policy for Pima Community College students who are enrolled for credit courses. The insurance is available without additional cost to the student. The policy covers students for injuries incurred during College activities. Details of the coverage are available to students at the time of registration.

Supplementary accident and sickness medical expense insurance may be purchased by students. Forms and information are available at each campus student services area.

## **Housing**

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

## **Leadership**

Students have a voice in College functions through recognized student government associations at each of the campuses, the Board of Governors, and appropriate student groups and committees. Student government representatives also sit on various task forces and committees that make recommendations to the administration.

Although the student representatives on the Board of Governors cannot cast a vote with the official members, they can voice an opinion on agenda items.

Students are urged to volunteer for College task forces and committees. For information on these activities, consult the Office of Student Activities or Office of Student Development on any campus.

## **Parking and Bus Service**

Free parking is provided at all Pima Community College campuses. However, you as a student 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 Other Non-Pedestrian Devices, available at all campus libraries and at any campus Office of Student Development. For information regarding how to obtain disabled parking permits, contact a DSR Specialist on any campus.

If you would like to organize a car pool, call RideShare (884-7433) for more information. If you are interested in riding the public bus, SunTran provides bus service to all campuses. Copies of current bus schedules are available in the student activities area of each campus. Or you may call SunTran at 792-9222 for schedule information.

## Publications

If you are interested in writing, editing, and reporting, you can work on one of Pima's two student publications. *Aztec Press*, a weekly newspaper, provides you an opportunity to learn about journalism. If you would like to serve on the newspaper staff in any position, please contact either the Arts and Communications Division office or *Aztec Press* at Building AL, Room G81 (see the map of West Campus in The College section of this catalog).

Pima also has a literary magazine. If you are interested in this form of publishing, you may enroll in WRT 162—Literary Magazine Workshop held at the Downtown Campus. The workshop annually publishes *Cababi*. The *Cababi* contains literary pieces, including those from Downtown Campus students, faculty, and staff. The magazine also sponsors an annual art contest for its cover and center pages. In addition, the Downtown Campus Graphic and Image Technology students print the magazine. If you are at Downtown Campus, you may submit work for consideration to *Cababi* in Building RV, Room 119.

## Pima Community College Alumni Association

An enthusiastic group of former Pima students began meeting in the fall of 1984 to discuss formation of a College alumni association. As a result of that meeting, a steering committee of dedicated alumni and staff over the next year wrote bylaws and formed the Pima Community College Alumni Association. Currently, the Association has a membership of more than 600.

### Purposes

- To maintain contact with alumni and continue to serve them.
- To validate the worth and benefit of a PCC education for current students and the community by focusing on alumni successes.
- To coordinate activities that further the welfare of the College, its students, and its alumni.
- To obtain financial support for current students and the College.

### Membership Eligibility and Benefits

To become a member of the Association, an individual needs to have completed a class, a certificate, or a degree from the College. The Association also welcomes associate members, those individuals who support and are



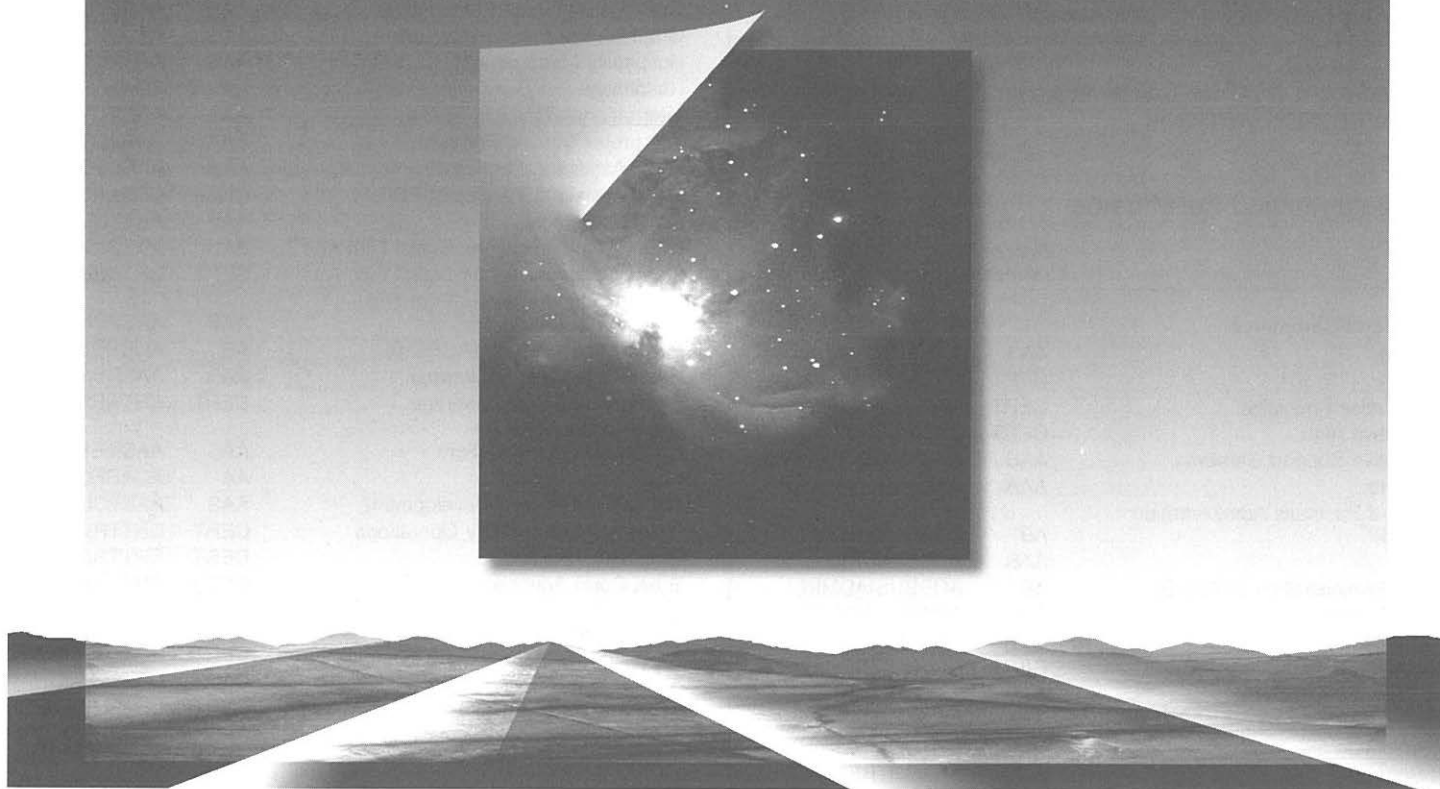
interested in furthering the goals of the Association. Individuals who join are entitled to:

- A subscription to the alumni newsletter containing information about the Association and the College
- Special alumni events
- Membership decal
- Leadership training opportunities
- The opportunity to assist current and future students in becoming as successful as our current alumni through scholarships and career advice.

For further information, including a membership brochure, contact the Alumni Office, 4905C East Broadway Blvd., Tucson, Arizona 85709-1330, (520) 206-4977.



# Educational Programs, Degrees, and Certificates



# Degrees and Certificates

Listed below are the current educational programs with their degrees or certificates and their program codes. If you are uncertain as to which code to use, or for information on programs appearing with no code, please see an advisor or counselor.

AB	Associate of Business Administration: AGEC-B
AA	Associate of Arts Degree: AGEC-A
AS	Associate of Science Degree: AGEC-S
AAA	Associate of Applied Arts Degree
AAS	Associate of Applied Science Degree
AGS	Associate of General Studies Degree
CERT	Certificate
CERA	Advanced Certificate (requires Associate or Bachelor Degree)
CTD	Certificate of Completion

## Credit Degrees and Certificates

Program	Degree/ Certificate	Code
<b>Business and Commerce</b>		
Accounting	AAS	AASACCOUNTIN
Accounting	CERT	CRTACCOUNTIN
Administrative Specialist	CERT	CRTADMINSPEC
Administrative Aide	CERT	CRTADMINAIDE
Administrative Support Careers	AAS	AASADMINSUPP
Applied Arts	AAA	AAAAPPLDARTS
Associate of Business Administration (AGEC-B)	AB	AOBBUSNADMIN
Banking	AAS	AASBANKING
Business Administration (AGEC-B)	AB	AOBBUSIADMIN
Business Administration-Retailing	AA	AOABUSADRETL
Business, Advanced	CERT	CRTBUSINES-A
Business, Basic	CERT	CRTBUSINES-B
Business	AAS	AASBUSINESS
Communication Graphics	AAS	AASCOMMGRAPH
Communication Graphics	CERT	CRTCOMMGRAPH
Court Reporting	AAS	AASCRTREPORT
Court Reporting-Court Clerk Option	CERT	CRTCRTREPCLK

Court Support Services	AAS	AASCRTSUPSRV
Court Support Services	CERT	CRTCRTSUPSRV
Credit Union, Advanced	CERT	CRTCRDUNIN-A
Credit Union, Basic	CERT	CRTCRDUNIN-B
Credit Union	AAS	AASCREDUNION
Culinary Arts	AAS	AASCULNRYART
Data Entry Clerk	CERT	CRTDATENTCLK
Data Entry Operator	CERT	CRTDATENTOPR
Graphics and Image Technology, Advanced	CERT	CRTGRPHTEC-A
Graphics and Image Technology, Basic	CERT	CRTGRPHTEC-B
Graphics and Image Technology	AAS	AASGRAPHTECH
Graphics Pre-Press Artist Option	AAS	AASPRESSARTS
Hospitality Management	AAS	AASHOSPITYMGT
Hospitality	AA	AOAHSPITALITY
International Business Studies	AAS	AASINTLBUSIN
Interpreter Training Program	AAA	AAAINTPTRAIN
Legal Assistant (Paralegal)	AAS	AASLEGALASST
Legal Assistant (Paralegal)-PDC	CERA	CRDLEGALASST
Legal Secretary	AAS	AASLGLSECRETY
Media Communications-Digital Film Arts	AAS	AASDIGIFILM
Media Communications-Digital Film Arts	CERT	CRTDIGIFILM
Media Communications-Print and Electronic Journalism	AAS	AASPRNTMEDIA
Public Administration (AGEC-B)	AB	AOBPUBLADMIN
Real Estate Sales/Brokerage	AAS	AASREALESTAT
Real Estate Sales/Brokerage	CERT	CRTREALESTAT
Records Management (Medical Record Option)	AAS	AASMEDSECRTY
Recreation/Tourism	AA	AOARECTOUR
Tourism Destination Development	AAS	AASTOURDESDV
Tourism/Travel Industry Operations	CERT	CRTRVRLINDUS
Translation Studies	CERT	CRTRTRANSLATE
Tribal Court Advocacy	CERT	CRTRTBCRTADV

## Technologies

Air Frame and Power Plant Mechanics	CERT	CRTAFPOWRPLT
Air Frame Mechanics	CERT	CRTAFMECHANI
Automotive Mechanics	CERT	CRTAUTOMECHS
Automotive Technology	AAS	AASAUTOTECHN
Aviation Structural Repair	AAS	AASAVSTRUREP
Aviation Structural Repair	CERT	CRTAVSTRUREP
Building and Construction Technology	AAS	AASBLDGCONST

Building and Construction Technology	CERT	CRTBLDGCON-A
Building and Construction Technology	CERT	CRTBLDGCON-B
Computer Programmer/Analyst	AAS	AASCMPPRGANL
Computer Programming Specialist	CERT	CRTCMPPRGSP
Computer Science	AS	AOSCOMPUTSCI
Construction Drafting, Advanced	CERT	CRTCONDRFT-A
Construction Drafting, Basic	CERT	CRTCONDRFT-B
Construction Drafting	AAS	AASCONDRAFT
Construction	AA	AOACONSTRUCT
Design	AAA	AAADESIGN
Drafting, Electro-Mechanical/Mechanical	CERT	CRTELECMECHN
Drafting	AAS	AASELECMECHN
Electronic Telecommunications Technology	AAS	AASTECELCOM
Electronics Technology	AAS	AASTECELECTR
Environmental Laboratory Analysis	CERT	CRTLABANALYS
Environmental Science	AA	AOAENVIROSCI
Environmental Technology	AAS	AASENVIRTECH
Hazardous Materials Management	CERT	CRTHAZMATMGT
Landscape Technician	AAS	AASLANDSCAPE
Landscape Technician	CERT	CRTLANDSCAPE
Machine Tool Technology	AAS	AASMACHNTOOL
Machine Tool-Computer Numerical Control (CNC) Machinist	CERT	CRTCNCMACHIN
Machinists Standard Certificate	CERT	CRTMACHSTAND
Microcomputer Repair, Advanced	CERT	
Microcomputer Repair, Basic	CERT	
Microcomputer Technology	AAS	AASTECCOMPUT
Microcomputer Technology	CERT	CRTTECCOMPUT
Pre-Architecture	CERT	CRTPREARCHIT
Semiconductor Manufacturing Technology	AAS	AASTECSEMCON
Small Computer Systems Administrator	AAS	AASCOMPSYSAD
Systems Networking Technology	AAS	AASTECNETWRK
Technical Mastery, Advanced	CERT	
Technical Mastery, Basic	CERT	
Technical Mastery	AAS	
Technology	CERT	CRTTECHNOLGY
Water and Wastewater Systems Technology	CERT	CRTWATERSYST
Web Technologies	CERT	CRTWEBTECH
Welding	AAS	AASWELDING
Welding	CERT	CRTWELDING

## Government and Public Service

Administration of Justice Studies	AA	AOAADMINJUST
Administration of Justice Studies	AAS	AASADMINJUST
Correctional Officers Training Academy	CERT	
Emergency Medical Technology, Basic	CERT	CRTEMEDTEC-B
Emergency Medical Technology-Paramedic	AAS	AASPARAMEDIC
Emergency Medical Technology-Paramedic	CERT	CRTPARAMEDIC
Family Support Services	CERT	
Fire Science	AAS	AASFIRESICIEN
Law Enforcement Careers	CERT	CRTLAWCAREER
Law Enforcement	AAS	
Law Enforcement	CERT	
Law Enforcement-Supervision	CERT	
Public Safety Communications	AAS	AASSAFETYCOM
Public Safety Communications	CERT	CRTSAFETYCOM
ROTC Air Force	CERT	CRTAIRFROTC
ROTC Army	CERT	CRTARMYROTC
ROTC Navy	CERT	CRTNAVYROTC
School-Age Child Care, Advanced	CERT	CRTCHILDCR-A
School-Age Child Care, Basic	CERT	CRTCHILDCR-B
School-Age Child Care	AAS	AASCHILDCARE
Social Services Domestic Violence Intervention	CERT	CRTDOMESVIOL
Social Services Eating Disorders	CERT	CRTEATINGDIS
Social Services Gerontology Speciality	AA	AOAGRNTLGYSP
Social Services Gerontology Speciality	AAS	AASGRNTLGYSP
Social Services Substance Abuse	CERT	CRTSUBSTABUS
Social Services Substance Abuse Speciality	AA	AOASUBSTABUS
Social Services Substance Abuse Speciality	AAS	AASSUBSTABUS
Social Services	AA	AOASOCIALSRV
Social Services	AAS	AASSOCIALSRV
Social Services	CERT	CRTSOCIALSRV
Teacher Aid/Assistant	CERT	CRTTEACHAIDE
Teacher/Director	AAS	AASTEACHDRCT
Youth Services Specialty	AA	AOAYOUTHSERV
Youth Services Specialty	AAS	AASYOUTHSERV

## Health and Wellness

Associate Degree Nursing	AAS
Dental Assistant Education	CERT
Dental Hygiene	AAS
Dental Laboratory Technology	AAS

Fitness and Sport Sciences	AA	AOAFITSPTSCI
Pharmacy Technology	AAS	
Pharmacy Technology	CERT	
Radiologic Technology	AAS	
Respiratory Care	AAS	

### Liberal Arts and Sciences

American Indian Studies	AA	AOAAMRINDSTU
Anthropology	AA	AOAANTHROPOL
Archaeology Field Work	CERT	CRTARCHFLDWK
Archaeology	AA	AOAARCHAEOLG
Asian Studies	AA	AOAASNSTUDY
Associate of Science (AGEC-S)	AS	AOSSCIENCE
Computer Archaeology and Cartography	CERT	CRTCOMPARCHE
Engineering	AS	AOENGINEERG
Field Archaeology	CERT	CRTFLDARCHEO
Fine Arts	AA	AOAFINEARTS
General Studies	AGS	AGSGENRSTUDY
Liberal Arts(AGEC-A)	AA	AOALIBRALART
Music	AA	AOAMUSIC
Political Science	AA	AOAPOLITLSCI
Sociology	AA	AOASOCIOLOGY
Speech Communications	AA	AOASPEECHCOM
Theatre	AA	AOATHEATER

### Other

Courses For Transfer (former App. Default)	n/a	CRS_TRANSFER
Special Interest, Job Skills, No Program	n/a	CRSJOBSKILLS
Special Interest, Personal Enrichment, No Program	n/a	CRSPERSENCH

## Non-Credit Certificates

Program Name	Certificate
<b>Business and Commerce</b>	
Accounting Assistant	CTD
Bakers Helper	CTD
Basic Teleservices	CTD
Bindry Worker	CTD
Bus Person	CTD
Coding Specialist	CTD
Computer Software Applications	CTD
Cooks Helper	CTD
Customer Service Representative I	CTD
Customer Service Representative II	CTD
Data Base Applications	CTD
Date Entry Operator	CTD
Entry Level Offset Duplicating Machine Operator	CTD
File Clerk	CTD
Introduction To Restaurant Industry	CTD
Introduction To Sales	CTD
Inventory Clerk	CTD
Keyboard Operator	CTD
Kitchen Helper	CTD
Legal Office Support Staff	CTD
Material Handler	CTD
Medical Office Specialist I	CTD
Medical Specialist II	CTD
Medical Transcriptionist	CTD
Microsoft Powerpoint For Windows	CTD
Microsoft Word For Windows	CTD
Office Assistant I	CTD
Office Assistant II	CTD
Office Specialist	CTD
Pantry Worker	CTD
Preparation Cook	CTD
Pre-Press Technician	CTD
Professional Medical Coding Specialist	CTD
Professional Sales Representative	CTD
Receiving Clerk	CTD

Receptionist	CTD
Shipping Clerk	CTD
Spreadsheet Applications	CTD
Unit Clerk	CTD
Warehousing Clerk	CTD
Word Processing Applications	CTD

#### **Government and Public Service**

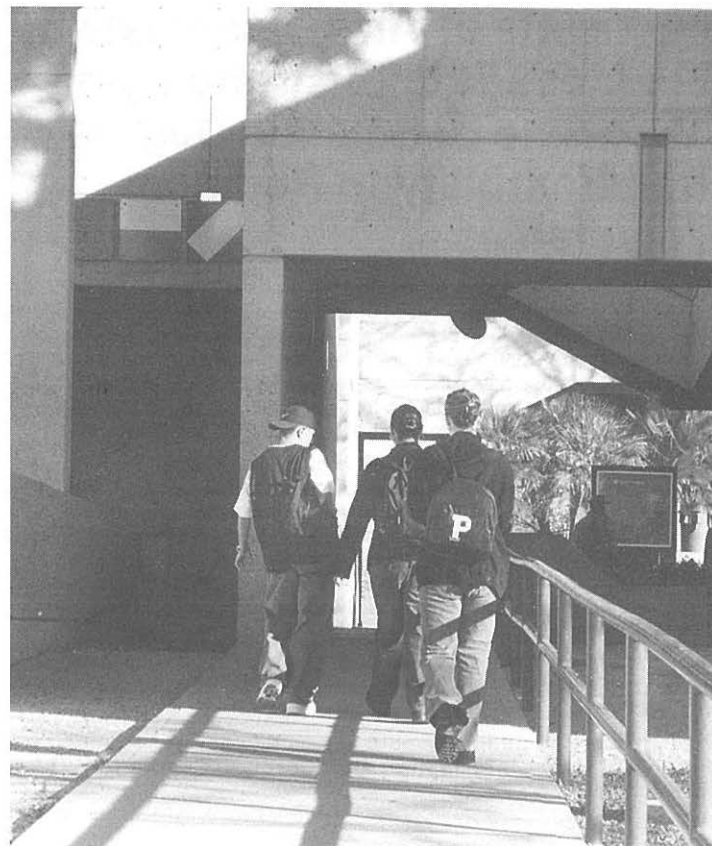
Child Care Assistant/Teacher	CTD
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#### **Health and Wellness**

Cardiopulmonary Resuscitation (CPR)	CTD
Certified Nursing Assistant I	CTD
Certified Nursing Assistant II	CTD
Certified Phlebotomist	CTD
Certified Surgical Instrument Technician	CTD
First Aide	CTD
Gastric Intubation	CTD
Home Health Aide	CTD
Initiating Intravenous Therapy For LPN	CTD
Injection Technician	CTD
Patient Care Technician	CTD
Practical Nurse	CTD
Psychiatric Aide	CTD
Refresher Course For Practical Nurse	CTD
Surgical Technician	CTD
Venipuncture	CTD

#### **Workplace Basic Skills**

Employability Skills	CTD
Job Readiness Skills	CTD
Workplace English As A Second Language, Listening Level B	CTD
Workplace English As A Second Language, Listening Level A	CTD
Workplace English As A Second Language, Listening Level C	CTD
Workplace English As A Second Language, Listening Level D	CTD
Workplace English As A Second Language, Reading Level A	CTD
Workplace English As A Second Language, Reading Level B	CTD
Workplace English As A Second Language, Reading Level C	CTD
Workplace English As A Second Language, Reading Level D	CTD
Workplace Mathematics	CTD
Workplace Reading Level A	CTD
Workplace Reading Level B	CTD



Workplace Reading Level C	CTD
Workplace Reading Level D	CTD
Workplace Reading/Interpreting Literature	CTD
Workplace Science	CTD
Workplace Social Studies	CTD
Workplace Writing	CTD



# Associate of Arts, Associate of Business Administration, and Associate of Science Degree Transferability to Regional Universities

The table below provides direction to a student regarding how Pima Community College's courses within the associate of arts (A.A.), associate of business administration (ABUS), and associate of science (A.S.) degrees transfer to the three state public universities and to other regional universities. Since all universities have distinct general education and degree requirements, it is important for a student to recognize the differences. This table only provides evidence as to the transferability of each PCC transfer degree.

For each associate of arts or associate of science degree program listed below, a percentage is given indicating how well each degree meets Pima Community College's curriculum standards for transferability to the indicated institution. One of the standards for transfer requires that seventy percent (70%) of the degree's core and support courses transfer as credit in a major. An "NT" means that the degree program does not meet the standard for transferability, and thus less than seventy percent (70%) of the core and support courses transfer as credit in a major.

The transfer percentages give some indication of what percentage of credits for courses a student can expect to receive, and what assurance the courses within the associate degree are intended to transfer.

**In every case, a student should see an advisor or counselor for detailed transfer information and for requirements to fulfill a bachelor's degree.**

## Examples:

1. The Associate of Arts in Anthropology Degree meets Pima Community College's curricular standard for transferability to Arizona State University, Northern Arizona University, and the University of Arizona. A student is assured that 100% of the courses in the degree will transfer to these institutions.
2. The Associate of Arts in Administration of Justice Studies transfers to Northern Arizona University (100% of core and support courses) and Western New Mexico University (100% of core and support courses). It

does not meet the standard for transfer to Arizona State University or the University of Arizona. The student should see an advisor or counselor about transfer to any of these universities, but in particular about transfer to Arizona State University and the University of Arizona.

## Exceptions:

Not all regional universities are represented. Grand Canyon University and Tucson University College of Arts and Sciences are not represented because at this time Pima Community College does not have articulation agreements with these institutions. These universities will be added when agreements are signed. However, some courses and degrees will transfer to these institutions; see an advisor or counselor for transfer information.

## Abbreviations:

ASU = Arizona State University

NAU = Northern Arizona University

UA = University of Arizona

UPHX = University of Phoenix

WNMU = Western New Mexico University

	ASU	NAU	UA	OTHER
<b>Administration of Justice Studies</b>				
A.A.	NT	100%	NT	WNMU: 100%
<b>American Indian Studies</b>				
A.A.	100%	83%	100%	
<b>Anthropology</b>				
A.A.	100%	100%	100%	
<b>Archaeology</b>				
A.A.	87%	93%	93%	
<b>Asian Studies</b>				
A.A.	100%	100%	100%	
<b>Associate of Science</b>				
A.S.	100%	100%	100%	
<b>Business Administration</b>				
ABUS	100%	100%	100%	UPHX: 100%
Business Administration— Retailing - A.A.	75%	75%	88%	
<b>Computer Science</b>				
A.S.	NT	75%	83%	
<b>Construction</b>				
A.A.	75%	81%	NT	

	ASU	NAU	UA	OTHER
<b>Engineering</b>				
A.S.	92%	92%	100%	
<b>Environmental Science</b>				
A.A.	92%	77%	92%	
<b>Fine Arts</b>				
A.A.	100%	97%	86%	
<b>Fitness and Sport Sciences</b>				
Physical Education - A.A.	94%	94%	100%	
<b>Hospitality/Tourism</b>				
Hospitality - A.A.	NT	100%	NT	
<b>Liberal Arts</b>				
A.A.	100%	100%	100%	
<b>Music</b>				
A.A.	71%	95%	100%	
<b>Political Science</b>				
A.A.	100%	100%	100%	
<b>Public Administration</b>				
ABUS	78%	86%	93%	UPHX: 100%
<b>Recreation/Tourism</b>				
A.A.	71%	NT	NT	
<b>Social Services</b>				
A.A.	NT	86%	NT	
Social Services Gerontology Specialty - A.A.	NT	82%	NT	
Social Services Substance Abuse Specialty - A.A.	NT	90%	NT	
Social Services Youth Services Specialty - A.A.	NT	75%	NT	
<b>Sociology</b>				
A.A.	92%	100%	100%	
<b>Speech Communication</b>				
A.A.	100%	100%	100%	
<b>Theater</b>				
A.A.	81%	100%	100%	

Note: Figures pertain to 98/99 CEG information.

## Arizona General Education Curriculum (AGEC) Certificate for Transfer

This display is designed for students planning to transfer to a university.

Upon completion of this certificate, the student fulfills the lower-division general education at all Arizona public universities and colleges including the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). It is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities.

This AGECE certificate completes the general education requirements of Pima Community Colleges Associate of Arts in Liberal Arts, Associate of Business Administrations, Associate of Science, and other associate degrees. Students are strongly advised to complete the associate degree after completing this certificate. See your advisor about completing an associate degree.

There are three AGECE pathways: the AGECE-A for Associate of Arts degrees, the AGECE-B for the Associate of Business Administration degree, and the AGECE-S for the Associate of Science degrees. Undecided students can complete the AGECE without concern for which university they may choose at a later date.

This certificate will transfer to the university as a block. When you complete your AGECE, see your advisor and request an AGECE completion form in order for your transcript to be stamped AGECE COMPLETED.

## Arizona General Education Curriculum (AGEC)— Certificate for Transfer

**Program Identification Codes:** Students should use the Associate of Arts, Associate of Business Administration, or Associate of Science program identification code.

### Required Courses (35 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**Core Courses** - A grade of C or better is required in all courses for graduation.

**Arizona General Education Curriculum (AGEC) Requirements** 35  
(See Transfer General Education (AGEC) Course Lists for AA, ABUS, and AS Degrees section of this catalog.)

**English Composition** 6

**Humanities and Fine Arts** 6-9  
(Select one course from the ART LIST and one course from the HUMANITIES/ HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements. See note under AGEC Special Requirements.)

**Biological and Physical Sciences** 8  
For an AGEC-A or an AGEC-B, complete any courses for a total of 8 credits from the Biological and Physical Science list.

For an AGEC-S, complete either sequence:  
CHM 151 and CHM 152 or PHY 210 and PHY 216

**Mathematics** 3  
For an AGEC-A, complete MAT 142 or higher.  
For an AGEC-B, complete MAT 212 or higher.  
For an AGEC-S, complete MAT 220 or higher.

**Social and Behavioral Sciences** 6-9  
(Select courses with at least two prefixes from this list. It is best to select courses that fulfill the I, C, and G AGEC Special Requirements. See note under the AGEC Special Requirements.)

**Other Requirement Options** 0-6

### AGEC Special Requirements \*

A student is required to fulfill the following AGEC Special Requirements:

1. Intensive Writing and Critical Inquiry (I)
2. Cultural Diversity (C)
3. Global Awareness (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, in the Transfer General Education Course List of the General Education Section of this catalog.

An individual course satisfying credit in the categorical requirement of Humanities and Fine Arts, Social and Behavioral Sciences, or Other Requirements may also fulfill one or more of the Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: Intensive Writing and Critical Inquiry (I) and Global Diversity (G). This is called double-dipping.

If a student does not double-dip the AGEC Special Requirements, additional credits beyond 35 may be required to complete this certificate.

### Suggested Course Sequence

See an advisor.

## Associate of Arts Degree for Transfer in Liberal Arts

**This degree display is designed for students planning to transfer to a university and not planning to major in business or science.** See the Associate of Business Administration (ABUS) if you are interested in business or the Associate of Science (AS) degree displays if interested in science.

### This degree is for you if:

- you are undecided about your major/degree and/or your university
- or
- you know your major/degree and the university.

With assistance of an advisor or counselor, this degree will transfer and fulfill the first two years of the following Arizona public university majors/degrees.

Agriculture	Geography
Anthropology	History
Art	Interdisciplinary Studies
Biology	Journalism
(Arizona State University and Northern Arizona University.	Languages
University of Arizona Biology majors, see the Associate of Science degree.)	Mathematics
	Media Arts
	Music

Communication  
Economics  
Education (Elementary, Rehabilitation,  
and Secondary Education)  
English  
Exercise and Sports Sciences  
Family and Consumer Resources

Philosophy  
Political Science  
Pre-law  
Psychology  
Religious Studies  
Social Work  
Sociology  
Theater Arts

For those students seeking a **major at the UA**, this transfer degree will match the university transfer guide requirements for the following UA degrees:

Art History	Linguistics
Classics	Mathematics
Creative Writing	Media Arts (Media Communications— Telecommunications Sequence)
East Asian Studies	Mexican-American Studies
Economics (Arts and Sciences)	Near Eastern Studies
Elementary Education	Philosophy
English	Portuguese
English (Extended)	Pre-Agriculture
French	Pre-Law
Geography	Psychology
German	Regional Development
Greek	Religious Studies
History	Russian
Interdisciplinary Studies	Russian & Soviet Studies
Italian	Secondary Education
Journalism (Media Communications—Print Media Sequence)	Spanish
Judaic Studies	Special Education and Rehabilitation
Latin	Speech & Hearing Sciences
Latin-American Studies	Theater Arts
	Women's Studies

The components of this degree are the same as required for a university degree and include:

General Education  
Second Language (depends on the major)  
Major/Electives  
Total Degree Credits

**How you complete this degree** depends upon whether you are undecided or you know your major.

### Undecided about your major and/or university:

Although it is best to know your major/degree, many students are undecided. If you are undecided, follow these steps:

### 1. General Education

If a student does not complete all 35 credits of the AGEC, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the Course Equivalency Guide and applied depending on the degree and college.

### 2. Second Language

Although you are undecided, consider completing a second language. All UA degrees require at least two semesters of a second language and most require four semesters. Most degree programs at the ASU and NAU also require a second language.

The universities highly recommend that you complete your language requirement while at Pima Community College.

A second language requirement is typically fulfilled by completing two or four semesters of courses; however, the requirement may also be fulfilled by testing out of the courses, CLEP, and high school AP credit. See your advisor or counselor.

### 3. Major/Electives

Although you currently do not have a major, complete transferrable courses in subjects in which you are interested. These courses may apply towards your major/degree once you have made that decision. Use transfer guides for the selection of the courses in the subjects that most interest you. The courses identified on the transfer guide as "common credits" will transfer to all state universities (ASU, NAU, and UA) in that major/degree.

It is best to decide your major/degree as soon as possible. Most degrees at the university are 120 credits. To complete most degrees in 120 credits (approximately four years, if you are full time), it is best to determine your degree/major before you have completed 30 credits. See your advisor or counselor.

### 4. Total Degree Credits

Complete no more than 64 transferrable credits. See your advisor or counselor each semester.

### 5. See the degree requirements below and see your advisor or counselor to establish your degree plan now.

### Know your major and the university you plan to attend:

#### 1. General Education

Complete all of your general education. This is very important. Your general education courses (35 credits) will transfer to the university as a block called the AGEC-A. When completed, your transcript will be stamped "AGEC-A COMPLETED." The AGEC-A will fulfill all lower-division general education at the public universities. You will not have to take any additional 100 or 200 level courses in general education at the university. If you do not

complete all 35 credits, your transcript will not be stamped with "AGEC-A COMPLETED" and you may be required to take additional courses at the university. When you complete your AGECE, see your advisor or counselor and request an AGECE-A completion form. If a student does not complete all 35 credits of the AGECE, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the Course Equivalency Guide and applied depending on the degree and college.

## 2. Second Language

Pick up a transfer guide from an advisor or counselor for the major/degree and the university you have selected. If a second language is required, complete all of the second language courses. The universities highly recommend that you complete your language requirement while at Pima Community College.

A second language requirement is typically fulfilled by completing two or four semesters of courses; however, the requirement may also be fulfilled by testing out of the courses, CLEP, and high school AP credit. See your advisor or counselor.

## 3. Major/Electives

Use the transfer guide for your major/degree to select courses in the major. See an advisor or counselor. The courses identified on the transfer guide as "common credits" will transfer to all state universities (ASU, NAU, and UA) in that major/degree.

## 4. Total Degree Credits

Complete no more than 64 transferrable credits. See your advisor or counselor each semester.

## 5. Getting Started

See the degree requirements below and see your advisor or counselor to establish your degree plan now.

# Associate of Arts Degree for Transfer in Liberal Arts

Program Identification Code: AOALIBRALART

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts degree transferability to regional universities, please refer to the chart in the front of this section. For a course to transfer, a grade of C or better is required.

## Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**Core Course:** A grade of C or better is required in all courses for graduation.

## Arizona General Education Curriculum (AGEC-A) Requirements

35

(See General Education section of this catalog for Associate of Arts degree course list.)

Completion of the general education portion of this degree (AGEC-A) fulfills all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). It is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGECE, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECE categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

<b>English Composition</b>	6
<b>Humanities and Fine Arts</b>	6-9
(Select one course from the ART LIST and one course from the HUMANITIES/ HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGECE Special Requirements.)	
<b>Biological and Physical Sciences</b>	8
<b>Mathematics</b>	3
Complete MAT 142 or higher.	



### Social and Behavioral Sciences 6-9

(Select courses with at least two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)

### Other Requirement Options 0-6

#### AGEC Special Requirements \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog.

An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Second Language Requirement 0-16

Completion of a language course numbered 211, fourth-semester level, or completion of SPA 202 or SLG 202. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.)

**It is highly recommended that undecided students complete the second language requirement. See your advisor or counselor.**

If you know your major/degree, your Transfer Guide will indicate whether if a Second Language is required. See your advisor or counselor.

### Major/electives 13-29

Select 13-29 transferrable credits from transfer guides of interest, **if you are undecided**. See your advisor or counselor.

Select 13-29 credits of transferable credits from the Transfer Guide of your major, **if you know your degree/major**.

See your advisor or counselor.

### Degree total 60-64

### Suggested Course Sequence

See an advisor or counselor.

## Associate of Science Degree for Transfer

Program Identification Code: AOSSCIENCE

**This degree display is designed for students planning to transfer to a university and planning to major in science.** See the Associate of Business Administration (ABUS) if you are interested in business or the Liberal Arts—Associate of Arts (AA) degree displays if interested in other majors.

**This degree is for you if you:**

- **Are undecided about your science major/degree and/or your university**  
If you are undecided, this is the best transfer degree for you.

**or**

- **Know your major/degree and the university.**

With assistance of an advisor or counselor, this degree will transfer and fulfill the first two years of the following Arizona public university majors/degrees.

Allied Health	Chemistry
Astronomy	Geology
Biology (only for University of Arizona.	Physics
Arizona State University or Northern	
Arizona University Biology majors, see	
the Liberal Arts-Associate of Arts Degree.)	

For those students seeking a **major at the UA**, this transfer degree will match the university transfer guide requirements for the following UA degrees:

Astronomy	Chemistry
Atmospheric Sciences	Ecology and Evolutionary Biology
Biochemistry	Biology—BA
Biology	Biology—BS
General	Geosciences (Geology)
Pre-Dental	Microbiology
Pre-Medical	Molecular/Cellular Biology
Pre-Pharmacy	Physics
Pre-Veterinary	

The components of this degree are the same as required for a university degree and include:

General Education  
Second Language (depends on the major)  
Major/Electives  
Total Degree Credits

How you complete this degree depends upon whether you are undecided or you know your major. Listed below are:

- steps for undecided students

followed by

- steps for students who know their major and degree:

### **Undecided about major and/ or university.**

#### **Steps**

Although it is best to know your major/degree, many students are undecided. Follow these steps:

##### **1. General Education**

Complete all of your general education courses. This is very important. Your general education courses (35 credits) will transfer to the university as a block called the AGEC-S. When completed, your transcript will be stamped "AGEC-S COMPLETED." The AGEC-S will fulfill all lower-division general education at the public universities. You will not have to take any additional 100 or 200 level general education courses at the university. If you do not complete all 35 credits, your transcript will not be stamped with "AGEC-S COMPLETED" and you may be required to take additional general education courses at the university. When you complete your AGEC, see an advisor or counselor and request an AGEC-S completion form.

If a student does not complete all 35 credits of the AGEC, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

##### **2. Second Language**

Although you are undecided, consider completing a second language. **All UA degrees require at least two semesters of a second language and most require four semesters.** Most degree programs at the ASU and NAU also require a second language.

**The universities highly recommend that you complete your language requirement while at Pima Community College.**

A second language requirement is typically fulfilled by completing two or four semesters of courses; however, the requirement may also be fulfilled by testing out of the courses, CLEP, and high school AP credit. See your advisor or counselor.

##### **3. Major Electives**

Although you currently do not have a major, complete transferrable courses in subjects in which you are interested. These courses may apply towards your major/degree once you have made that decision. Use

transfer guides for the selection of the courses in the subjects that most interest you. The courses identified on the transfer guide as "common credits" will transfer to all state universities (ASU, NAU, and UA) in that major/degree.

It is best to decide your major/degree as soon as possible. Most degrees at the university are 120 credits. To complete most degrees in 120 credits (approximately four years, if you are full time), it is best to determine your degree/major before you have completed 30 credits. See your advisor or counselor.

##### **4. Total Degree Credits**

Complete no more than 64 transferrable credits. See your advisor or counselor each semester.

##### **5. See the degree requirements below and see your advisor or counselor to establish your degree plan now.**

### **Know your major and the university you plan to attend.**

#### **Steps**

##### **1. General Education**

Complete all of your general education courses. This is very important. Your general education courses (35 credits) will transfer to the university as a block called the AGEC-S. When completed, your transcript will be stamped "AGEC-S COMPLETED." The AGEC-S will fulfill all lower-division general education at the public universities. You will not have to take any additional 100 or 200 level courses in general education at the university. If you do not complete all 35 credits, your transcript will not be stamped with "AGEC-S COMPLETED" and you may be required to take additional courses at the university. When you complete your AGEC, see your advisor or counselor and request an AGEC-S completion form.

If a student does not complete all 35 credits of the AGEC, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

##### **2. Second Language**

Pick up a transfer guide from an advisor or counselor for the major/degree and the university you have selected. If a second language is required, complete all of the second language courses. The universities highly recommend that you complete your language requirement while at Pima Community College.

A second language requirement is typically fulfilled by completing two or four semesters of courses; however, the requirement may also be fulfilled by testing out of the courses, CLEP, and high school AP credit. See your advisor or counselor.

### 3. Major/Electives

Use the transfer guide for your major/degree to select courses in the major. See an advisor or counselor. The courses identified on the transfer guide as "common credits" will transfer to all state universities (ASU, NAU, and UA) in that major/degree.

### 4. Total Degree Credits

Complete no more than 64 transferrable credits. See your advisor or counselor each semester.

### 5. Getting Started

See the degree requirements below and see your advisor or counselor to establish your degree plan now.

## Associate of Science Degree for Transfer

Program Identification Code: AOSSCIENCE

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Science degree transferability to regional universities, please refer to the chart in the front of this section. For a course to transfer, a grade of C or better is required.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**Core Courses:** A grade of C or better is required in all courses for graduation.

CHM 151	General Chemistry I		MAT 122*
CHM 152	General Chemistry II		CHM 151
or			
PHY 210	Introductory Mechanics		MAT 220*
PHY 216	Introductory Electricity and Magnetism	10	PHY 210*
MAT 220	Calculus I	5	MAT 182*

0-16

### Second Language Requirement

Completion of a language course numbered 211, fourth-semester level, or completion of SPA 202 or SLG 202.

(Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.)

**It is highly recommended that undecided students complete the second language requirement. See your advisor or counselor.**

If you know your major/degree, your Transfer Guide will indicate whether if a Second Language is required. See your advisor or counselor.

### Major/Electives

9-25

Select 9-25 transferrable credits from transfer guides of interest, **if you are undecided**. See your advisor or counselor.

Select 9-25 credits of transferable credits from the Transfer Guide of your major, if you know your degree/major.

See your advisor or counselor.

### Arizona General Education Curriculum (AGEC-S) Requirement

35

(See General Education section of this catalog for Associate of Arts degree course list.)

Completion of the general education portion of this degree (AGEC-S) fulfills all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). It is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGEC, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college. See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

### English Composition

6

### Humanities and Fine Arts

6

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

### Biological and Physical Sciences

8

(Core courses, CHM 151/ 152 or PHY 210/216, fulfill this requirement. This requirement is completed.)

**Mathematics** 3  
(Core course, MAT 220, fulfills this requirement.  
This requirement is completed.)

**Social and Behavioral Sciences** 6  
(Select courses with at least two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)

**Other Requirement Options** 6  
(Select additional math or science courses to fulfill this requirement.)

**AGEC Special Requirements** \*  
A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

**Degree Total** 60-64

**Suggested Course Sequence**  
See your advisor or counselor.



# Accounting

The accounting degree program trains students in the theory, systems and basic problems of business accounting. The student will have the background for a beginning career in areas such as private, public and government accounting. Students who plan to become Certified Public Accountants should take the courses required for the business administration transfer program.

## Accounting—Certificate for Direct Employment

Program Identification Code: CRTACCOUNTIN

### Required Courses (38 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ACC 100	Practical Accounting Procedures	3	
ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	*
ACC 150	Payroll Accounting	3	*
ACC 200	Accounting on the Microcomputer I	4	*
ACC 204	Individual Tax Accounting	4	*

### Support Courses

BUS 100	Introduction to Business	3	
BUS 105	Survey of Microcomputer Uses		
or CSC 105	Survey of Microcomputer Uses		
or CSC 100	Introduction to Computers and Information Systems	3	*
BUS 200	Business Law I		
or 220	Legal Environment of Business	3	
MAN 110	Human Relations in Business and Industry	3	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:  
WRT 101 or 107 or 154

## Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics course lists.

### Mathematics

If MAT is met by assessment then choose one course from science or the critical thinking course list.  
MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See an accounting faculty advisor or counselor.

\*For additional prerequisite information, check course section.

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

Program Identification Code: AASACCOUNTIN

### Required Courses (65-69 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	*
ACC 150	Payroll Accounting	3	*
ACC 200	Accounting on the Microcomputer I	4	*
ACC 201	Intermediate Accounting I	3	ACC 102
ACC 202	Intermediate Accounting II	3	ACC 201
ACC 203	Cost Accounting	3	*
ACC 204	Individual Tax Accounting	4	*
ACC 173	Introduction to Fund Accounting		ACC 101
or 205	Corporate and Partnership Tax Accounting		ACC 101
or 210	Accounting on the Microcomputer II	3-4	ACC 200



### Support Courses

BUS 100	Introduction to Business	3	
BUS 105	Survey of Microcomputer Uses		
or CSC 105	Survey of Microcomputer Uses		
or CSC 100	Introduction to Computers and Information Systems	3	*
BUS 200	Business Law I		
or 220	Legal Environment of Business	3	
ECN 200	Basic Economic Principles		MAT 092
or 202	Macroeconomic Principles	3	MAT 092
MAN 280	Business Organization and Mgmt	3	*
Other Electives		3-6	

Complete one courses from the subject areas

listed below (must be 100 level or higher):

ANT, ECN, HUM, MAT, PHI, POS, PSY, REA, SOC, WRT

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

#### Analysis and Critical Thinking

6

##### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

TEC 113

##### **Science**

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List

### Critical Thinking

PHI 120

#### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the

Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other

Requirements Options: (c) Second Language

Any conversational language course including American

Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the

Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other

Requirement Options: (d) International and Multi-

Cultural Studies list

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

#### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

#### **Suggested Course Sequence**

See an accounting faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Administration of Justice Studies

(See Public Safety and Emergency Services Institute)

# Administrative and Office Support Careers

Administrative and Office Support Careers offers a variety of courses and programs. The certificate offerings include administrative aide, data entry clerk, administrative specialist, and data entry operator. The Associate of Applied Science degree offers students the opportunity to pursue preparation to become an administrative assistant, a computer applications specialist, a medical office manager, or a medical transcriber. There is also an Associate of Applied Science degree in records and management with options in either business or health information management.

The Administrative and Office Support Careers curriculum offers education in communications, business and management subjects, and includes computer applications, professional development, and administrative operations.

## Administrative Aide—Certificate for Direct Employment

Program Identification Code: CRTADMINAIDE

An administrative aide performs a variety of tasks to facilitate office operations. See an administrative and office support faculty advisor or counselor located on the Downtown or Desert Vista Campuses.

### Required Courses (20 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ASC 111	Computer Keyboarding and Document Production	3	
ASC 123	Professional Development for Administrative Support	2	*
ASC 131	Computer Applications: Word Processing Operations	3	ASC 111A
ASC 151	Business English	3	*
ASC 171	Office Procedures	3	*
RIM 132	Records Management: Filing Systems	3	

### Support Course

BUS 151	Mathematics of Business	3	*
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### Suggested Course Sequence

See an advisor or counselor.

\*For additional prerequisite information, check course section.

## Administrative Specialist—Certificate for Direct Employment

Program Identification Code: CRTADMINSPEC

An administrative specialist manages, coordinates, and organizes an office to provide administrative support to an organization. See an administrative and office support faculty advisor or counselor located on the Downtown or Desert Vista Campuses.

### Required Courses (43 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ASC 111	Computer Keyboarding and Document Production	3	
ASC 112	Advanced Computer Keyboarding/Document Production	3	ASC 111
ASC 123	Professional Development for Administrative Support	2	*
ASC 131	Computer Applications: Word Processing Operations	3	*
ASC 132	Computer Applications: Database Operations	2	*
ASC 133	Computer Applications: Spreadsheet Operations	2	*
ASC 171	Office Procedures	3	*
ASC 224	Machine Transcription	3	*
ASC 251	Business Communications I	3	ASC 151
RIM 132	Records Management: Filing Systems	3	
RIM 133	Records Management: Development of a Program	3	

### Support Courses

ACC 100	Practical Accounting Procedures	3	
ASC 199	Co-op Related Class in ASC	1	*
ASC 199	Co-op Work in ASC	3	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

3

ASC 151

**Analysis and Critical Thinking**

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

**Mathematics**

MAT 100 level or higher (except MAT 198)  
TEC 113

**Science**

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list.

**Critical Thinking**

PHI 120

**Suggested Course Sequence**

See an advisor or counselor.

\*For additional prerequisite information, check course section.

## Administrative and Office Support Careers Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASADMINISUPP

This degree prepares students for entering into the administrative and office support careers field. Students will choose to specialize in one of the following options: administrative assistant, computer applications, or the medical option with a specialty in either medical administrative support or medical transcription. See an administrative and office support faculty advisor or counselor located on the Downtown or Desert Vista Campuses.

**Required Courses (61-68 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading requirement in the General Education section before enrolling in a general education course.

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

ASC 111	Computer Keyboarding and Document Production	3
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ASC 123	Professional Development for Administrative Support	2	*
ASC 131	Computer Applications: Word Processing Operations	3	*
ASC 132	Computer Applications: Database Operations	2	*
ASC 133	Computer Applications: Spreadsheet Operations	2	*

**Support Courses**

ASC 199	Co-op Related Class in ASC	1	*
ASC 199	Co-op Work in ASC	3	*

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	6
ASC 151 and 251	

<b>Analysis and Critical Thinking</b>	6
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**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)  
TEC 113

**Science**

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List

**Critical Thinking**

PHI 120

<b>Global Awareness</b>	6
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This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

**Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

**Choose one of the following options:**

(Department faculty advisor or counselor approval is recommended in the selection of the program option.)

**Administrative Assistant**

ASC 112	Advanced Computer Keyboarding: Document Production	3	*
ASC 124	Computer Applications: Introduction to Data Entry	1	
ASC 126	Microcomputer Software/Hardware topics	3	ASC 100
ASC 135	Computer Applications: Integrated Windows Software	4	*
ASC 171	Office Procedures	3	*
ASC 224	Machine Transcription	3	*
ASC 255	Business Communications II	2	ASC 251
ASC 281	Administrative Support Operations	3	ASC 171
MAN 122	Supervision	3	
RIM 132	Records Management: Filing Systems	3	

RIM 133	Records Management: Development of a Program	3	
RIM 233	Supervision and Administration of Records	3	RIM 133

**Computer Applications**

ACC 200	Accounting on the Microcomputer I	3	*
ASC 125	Data Entry Procedures and Operations	3	
ASC 126	Microcomputer Software/Hardware Topics	3	
ASC 134	Data Entry Advanced Keystroke Development	2	*
ASC 135	Computer Applications: Integrated Windows Software	4	*
ASC 136	Data Entry Simulated Work Site Routines	3	*
ASC 171	Office Procedures	3	ASC 111
ASC 230	Desktop Publishing for Administrative Support Personnel	3	ASC 131
RIM 132	Records Management: Filing Systems	3	

**Medical Option**

(Take the following four courses and one of the specialty areas below)

ASC 162	Medical Terms I	3	
ASC 262	Medical Terms II	3	ASC 162
BIO 160	Introduction to Human Anatomy and Physiology (meets Math/Science requirement replacing ACC 100)	4	
BIO 204	Survey of Human Diseases (meets Math/Science requirement replacing BUS 151)	4	*

**Medical Administrative Support Speciality**

ASC 112	Advanced Computer Keyboarding: Document Production	3	*
ASC 124	Computer Applications: Introduction to Data Entry	1	
ASC 161	Medical Office Procedures	4	*
ASC 164	Medical Transcription I	3	*
RIM 121	Introduction to Health Information Management	2	

RIM 132	Records Management: Filing Systems	3	
RIM 221	Medical/Health Record Coding	3	*

### Medical Transcription Speciality

ASC 112	Advanced Computer Keyboarding: Document Production	3	*
ASC 114	Computer Keyboarding: Skillbuilding	1	
ASC 164	Medical Transcription I	3	*
ASC 264	Medical Transcription II	3	*
ASC 266	Medical Transcription III	3	*
HCA 155	Introduction to Pharmacology	3	
Elective		3	

(Department faculty advisor or counselor approval necessary in the selection of the elective. Should be medical or office skills related.)

### Suggested Course Sequence

See an administrative support careers faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Records and Information Management—Associate of Applied Science Degree for Direct Employment

The Records and Information Management program is designed to train students for direct employment in business and industry or the health information management field. The program is transferable to the University of Phoenix. Students who wish to transfer to another four-year university will have met some of the general education requirements. For students selecting the Health Information Management option, Phoenix College in the Maricopa Community College District has an accredited Health Information Technology program. Some of these courses may meet the requirements of the American Health Information Management Association's correspondence program. See an administrative and office support faculty advisor or counselor located on the Downtown or Desert Vista Campuses.

Program Identification Code: AASMEDSECTY

### Required Courses (60-68 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading requirement in the General Education section before enrolling in a general education course.

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

RIM 132	Records Management: Filing Systems	3	
RIM 133	Records Management: Development of a Program	3	
RIM 231A	Records Management: Forms	1	RIM 133
RIM 231B	Records Management: Micrographics	1	RIM 133
RIM 231C	Records Management: Automated Retrieval	1	RIM 133
RIM 232	Records Management: Supervision	3	RIM 133

### Support Courses

ACC 101	Financial Accounting	3	
ASC 199	Co-op Related Class in ASC	1	*
ASC 199	Co-op Work in ASC	1-3	*
MAN 276	Human Resources	3	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

6

ASC 151 and 251

WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking

6

### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

TEC 113



**Science**

MAC 275

Any AGECE categorical requirement from the  
Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness**

6

This requirement must be met by taking a course from  
at least two of the categories and one of the courses  
must contain cultural diversity criteria, a C or G designation  
from the AGECE categorical requirements lists.

**Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the  
Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other  
Requirements Options: (c) Second Language

Any conversational language course including  
American Sign Language (SLG) numbered at the 100  
level or higher.

**Social and Behavioral Sciences**

Any AGECE Categorical requirement from the  
Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other  
Requirement Options: (d) International and Multi-  
Cultural Studies list

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural  
diversity requirement.

**Computer Literacy**

0-3

This requirement may be met by either course work  
or by competency attained through or determined  
by the program.

CSA 173, 174, 175

Choose one of the following options:

(Department faculty advisor approval is  
recommended in the selection of the program option.)

**Business and Industry Option**

BUS 100	Introduction to Business	3	
BUS 220	Legal Environment of Business	3	
ECN 200	Basic Economic Principles	3	MAT 092
HIS 141	History of the United States I	3	

**Technical Electives**

Complete 9 credit hours from the following list:

ASC 131, 132, 133, 135, CSC 100

**Health Information Management Option**

ASC 162	Medical Terms I	3	*	
BIO 201	Human Anatomy and Physiology I	4		BIO 156
BIO 202	Human Anatomy and Physiology II	4		BIO 201
BIO 204	Survey of Human Diseases	4	**	
RIM 121	Introduction to Medical Record Science	2		
RIM 221	Medical/Health Record Coding	3	*	

**Technical Electives**

Complete 6 credit hours from the following list:

ASC 131, 132, 133, 135, CSC 100

**Suggested Course Sequence**

See an advisor or counselor.

\*\*BIO 201 meets the prerequisite.

\*For additional prerequisite information, check course section.

**Data Entry Clerk—Certificate for Direct Employment**

Program Identification Code: CRTDATENTCLK

This program offers the student the skills needed to enter the market as an entry-level trainee for such jobs as data entry operator, on-line terminal operator and data entry/microcomputer operator. Success in the program requires good keying and reading skills and the ability to understand and follow directions exactly. Keystroke skill of 8,000 strokes per hour is required in order to be successful in data entry keystroke development courses and to meet certificate requirements. Keystroke development courses are available to assist students in meeting the requirement. See an administrative and office support faculty advisor or counselor located on the Downtown Campus.

**Exit Requirement:**

Reading requirement - A minimum score that is equivalent to at least 12th grade level as measured by college assessment or successful completion of REA 112 or higher. Proficiency at the REA 112 level or higher will enhance student achievement.

**Required Courses (19 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ASC 111	Computer Keyboarding and Document Production	3	
ASC 123	Professional Development for Administrative Support	2	
ASC 125	Data Entry Procedures and Operations	3	
ASC 126	Microcomputer Software/Hardware Topics	3	ASC 100
ASC 134	Data Entry Advanced Keystroke Development	2	*
ASC 136	Data Entry Simulated Work Site Routines	3	*

**Support Course**

BUS 151	Mathematics of Business	3	*
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**Suggested Course Sequence**

See an advisor or counselor.

\*For additional prerequisite information, check course section.

**Data Entry Operator—Certificate for Direct Employment**

Program Identification Code: CRTDATENTOPR

This certificate qualifies students to function independently without additional training as beginning level operators of data entry equipment, on-line terminals and microcomputers. In addition, students are trained in word processing and the use of spread sheets and databases. Good reading and listening skills are essential for success in this program. Keystroke skill of 8,000 strokes per hour is required in order to be successful in the data entry keystroke development courses and to meet certificate requirements. Keystroke development courses are available to assist students in meeting the requirement. See an administrative and office support faculty advisor or counselor located on the Downtown Campus.

**Exit Requirement:**

Reading requirement - A minimum score that is equivalent to at least 12th grade level as measured by college assessment or successful completion of REA 112 or higher. Proficiency at the REA 112 level or higher will enhance student achievement.

**Required Courses (40 Credit Hours)**

Course Number	Course Title	Hours	Credit Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ASC 111	Computer Keyboarding and Document Production	3	
ASC 123	Professional Development for Administrative Support	2	
ASC 125	Data Entry Procedures and Operations	3	
ASC 126	Microcomputer Software/Hardware Topics	3	ASC 100
ASC 131	Computer Applications: Word Processing Operations	3	*
ASC 132	Computer Applications: Database Operations	2	*
ASC 133	Computer Applications: Spreadsheet Operations	2	*
ASC 134	Data Entry Advanced Keystroke Development	2	*
ASC 135	Computer Applications: Integrated Windows Software	4	*
ASC 136	Data Entry Simulated Work Site Routines	3	*

**Support Courses**

ACC 100 or 101	Practical Accounting Procedures Financial Accounting (if higher degree is being pursued)	3	
ASC 199	Co-op Related Class in ASC	1	*
ASC 199	Co-op Work in ASC	3	*

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

ASC 151

**Analysis and Critical Thinking** 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

**Suggested Course Sequence**

See an advisor or counselor.

\*For additional prerequisite information, check course section.

## American Indian Studies

This program is open to all students, Native American and non-native American for transfer to the University of Arizona. In addition to preparing students for study of Native American issues and topics, it provides the groundwork for moving into other areas within Liberal Arts and Sciences at the upper level of the junior and senior year. Additionally, with a few minor adjustments in mathematics, a student can prepare for a Business/Public Administration program.

In addition to the academic preparation for transfer to the University this program makes the symbolic and literal statement that Pima Community College does in essence value and reflect cultural and linguistic diversity.

Students planning to transfer to Arizona State University or Northern Arizona University should verify transfer courses and requirements unique to the transfer university or college or with a Pima Community College counselor or faculty advisor or counselor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science degree transferability to regional universities, please refer to the chart in the front of this section.

## American Indian Studies—Associate of Arts Degree for Transfer

Program Identification Code: AOAAMRINDSTU

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hour	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ANT	206	Contemporary Native Americans of the Southwest	3
HIS	122	Tohono O'odham History and Culture	3
HIS	124	History & Culture of the Yaqui People	3
HIS	148	History of Indians of North America	3
HUM	260	Intercultural Perspectives	3

### Support Courses

**Foreign Language Requirement** 4-16

Completion of a language course numbered 211, fourth-semester level, or completion of SPA 202 or SLG 202.

### Exceptions:

1. Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.
2. Native American students may also test out of this requirement. See an advisor or counselor in American Indian Studies at the University of Arizona.

If a student satisfies the language requirement in fewer than 4 credits, additional credit hours of transferable electives must be completed to meet the minimum Associate degree requirement of 60 credit hours. See a faculty advisor or counselor.

**Electives** 9-13

Select 9-13 transferrable credits. See your advisor or counselor.

## Arizona General Education Curriculum

### (AGEC-A) Requirements

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECE categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

<b>English Composition</b>	6
<b>Humanities and Fine Arts</b>	6
(Core courses, ANT 206, fulfills 3 credits of this requirement. Complete a course from the ART LIST.)	
<b>Biological and Physical Sciences</b>	8
<b>Mathematics</b>	3
(Complete MAT 142 or higher.)	
<b>Social and Behavioral Sciences</b>	9
(Three core courses, HIS 124, HIS 148, and HUM 260, fulfill this requirement. <u>This requirement is completed.</u> )	
<b>Other Requirement Options</b>	3
(A second language course fulfills this requirement. <u>This requirement is completed.</u> )	
<b>AGECE Special Requirements</b>	*

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I) (A core course, HUM 260, fulfills this requirement. This requirement is completed.)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C) (A core course, HUM 260, fulfills this requirement. This requirement is completed.)

3. Global diversity (G) (The second language course completed fulfills this requirement. This requirement is completed.)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See an American Indian Studies faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Anthropology

(See also Archaeology.)

The anthropology and archaeology programs prepare graduates for further academic studies at a four-year college or university as well as providing practical job-related skills. Anthropology students can select from an Associate of Arts Degree for Transfer in Liberal Arts program as well as basic and advanced certificates that emphasize archaeological fieldwork.

The Associate of Arts Degree for Transfer in Liberal Arts in anthropology provides a global understanding of the nature of humankind as well as developing the student's awareness of the biological and cultural development of humanity. Emphasis is placed on the heritage and cultural diversity of the Southwest. The program prepares students for upper division study in anthropology at a major university. The curriculum generally parallels the lower division anthropology and liberal arts requirements at the state universities.

All students must complete the core curriculum of 18 credit hours (ANT 101, 102, 200, 210, 215 and 225). In addition, students with interests in archaeology and physical anthropology must also complete Option 1 and students with interests in cultural anthropology and linguistics must complete Option 2 as outlined here. (One option must be selected by each student.) Those with specific interests in field archaeology may pursue the course outlined under the archaeological fieldwork certificates.

## Anthropology—Associate of Arts Degree for Transfer

Program Identification Code: AOAANTHROPOL

After successfully completing this program students may be eligible to transfer to upper class levels in anthropology at a four-year college or university. Students should consult the catalog for the institution to which they plan to transfer in order to establish the graduation and anthropology major requirements and determine the transferability of Pima Community College courses.

Any student who completes the Associate of Arts Degree for Transfer in Liberal arts in Anthropology will fulfill the Pima Community College and University of Arizona general education requirements as well as the lower division requirements for anthropology majors at the University of Arizona.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on A.A. and A.S. degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ANT 101	Human Origins and Prehistory	3	
ANT 102	Introduction to Cultural Anthropology and Linguistics	3	
ANT 200	Biological Anthropology	3	**
ANT 210	Cultural Anthropology	3	ANT 102
ANT 215	The Nature of Language	3	**
ANT 225	Archaeology	3	**

### Support Courses

#### Second Language Requirement 4-8

Complete two language courses at the 100 level or higher. Students may satisfy the language requirement by testing out of or completing any language course numbered 211. (Bilingual or international students should consult an advisor or counselor concerning exceptions to this requirement.)

**Non-West Civ** Non-Western Civilization 3  
Complete one of the following:

ANT 205 Introduction to Southwestern Prehistory

or

ANT 206 Contemporary Native Americans of the Southwest

**ANT ELEC** Complete 6-8 credit hours of electives after consultation with an anthropology faculty advisor or counselor OR continue with the second year of a transferable foreign language. 6-8

### Arizona General Education Curriculum (AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGEC-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGEC, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 6

(Support courses, ANT 205 or 206, fulfill three credits of this requirement. Complete one course from the ART LIST. See an anthropology faculty advisor or counselor for the other recommended course.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)



**Social and Behavioral Sciences** 9  
(Core courses, ANT 101 and ANT 102, satisfy 6 credits of this requirement. To satisfy the remaining 3 credits, complete either SOC 201 or SOC 204.)

**Other Requirement Options** 3  
(The second language course fulfills this requirement. This requirement is completed.)

**AGEC Special Requirements** \*  
A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G) (ANT 102 fulfills this requirement. This requirement is completed.)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

**Suggested Course Sequence** (Read down.)

First Year:	Second Year:
Reading requirement	Biological and Physical Sciences requirement
ANT 101	Humanities and Fine Arts requirement
ANT 102	Mathematics requirement
English composition	ANT 205 or ANT 206
Foreign language	ANT elective
SOC 201 or 204	ANT 200 level core course
ANT 200 level core course	ANT 200 level core course
ANT 200 level core course	Biological and Physical Sciences requirement
English composition	Humanities and Fine Arts requirement
Foreign language	ANT elective
Humanities and Fine Arts requirement	

\*For additional prerequisite information, check course section.

\*\*Note: 200 level courses are not necessarily offered each semester. Consult with an anthropology faculty advisor or counselor to determine when specific courses will be offered.

## Archaeology

(See also Anthropology)

### Field Archaeology

The archaeological fieldwork curriculum at Pima Community College is designed to provide interested persons with basic and advanced levels of practical archaeological field experience. Field courses are taught within the context of Arizona prehistory and emphasize an appreciation of the archaeological and environmental resources of the American Southwest. No prior experience or prerequisites are necessary to begin the program or to enroll for classes.

Students have the opportunity to develop a wide variety of skills and abilities in field archaeology. Emphasis is placed on actual field experience, supplemented by appropriate lecture courses. The curriculum is flexible enough to meet the needs of students pursuing professional training in archaeology, amateur archaeologists, and people with general interest in archaeology. The program strives to promote the preservation and conservation of archaeological resources and to contribute to the knowledge of the prehistory of Southern Arizona. Upon the completion of the courses listed, an individual will receive either a certificate in field archaeology or a certificate in archaeological fieldwork, a certificate in Computer Archaeology and Cartography, or an Associate of Arts Degree in Liberal Arts in Archaeology.

### Basic Field Archaeology—Certificate

Program Identification Code: CRTFLDARCHEO

#### Required Courses (20 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - 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	
ARC 180	Artifact Identification	1	
ANT/ARC 205	Introduction to Southwestern Prehistory	3	
ANT/ARC 207	Southwestern Prehistory Lab	1	*
ANT/ARC 225	Archaeology	3	
ANT/ARC 275	Archaeological Excavation I	3	
ANT/ARC 276	Archaeological Exploration I	3	*

### Suggested Course Sequence

See an archaeology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Advanced Archaeological Fieldwork—Certificate

Program Identification Code: CRTARCHFLDWK

### Required Courses (48 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ARC/ANT 101	Human Origins and Prehistory	3	
ARC 180	Artifact Identification	1	
ARC/ANT 205	Intro to Southwestern Prehistory	3	
ARC/ANT 207	Southwestern Prehistory Lab	1	*
ARC/ANT 225	Archaeology	3	
ARC/ANT 250	Archaeology Laboratory	3	ANT/ARC 101
ARC/ANT 275	Archaeological Excavation I	3	
ARC/ANT 276	Archaeological Exploration I	3	*
ARC 277	Archaeological Excavation II	3	ANT/ARC 275
ARC 278	Archaeological Exploration II	3	*
ARC 285	Field Mapping I	3	ARC 275
BCT 204	Construction Surveying	3	MAT 110
or ENG 130	Elementary Surveying	3	*
BUS 105	Survey of Microcomputer Uses	3	
GLG 101	Introductory Geology I	4	
WRT 254	Technical Communications II	3	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

WRT 154

3

#### Analysis and Critical Thinking

3

#### Mathematics

MAT 111 or 182

### Suggested Course Sequence

See an archaeology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Computer Archaeology and Cartography—Certificate

Program Identification Code: CRTCOMPARACHE

### Required Courses (43-46 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ARC 180	Artifact Identification	1	
ARC/ANT 225	Archaeology	3	
ARC/ANT 250	Archaeology Laboratory	3	ARC 101
ARC/ANT 275	Archaeological Excavation I	3	
ARC/ANT 276	Archaeological Exploration I	3	*
ARC 281	Field Computers	1	BUS 105
ARC 282	Managing Archaeological Data	2	*
ARC 283	ArchaeoCAD	3	BUS 105
ARC 284	Archaeocartography	3	BUS 105
ARC 285	Field Mapping I	3	ANT/ARC 275
ARC 286	Field Mapping II	3	*
ARC/ANT 289	Field Instruments	3	*
BCT 204	Construction Surveying	3	MAT 110
or ENG 130	Elementary Surveying	3	*
WRT 254	Technical Communications II	3	*
CSC**	Programming languages	3-6	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

WRT 154

3

#### Analysis and Critical Thinking

#### Mathematics

MAT 111 or 182

3

## Suggested Course Sequence

See an archaeology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\*To be selected in consultation with Archaeology faculty advisor or counselor.

## Archaeology—Associate of Arts Degree for Transfer

Program Identification Code: AOAARCHAEOLG

After successfully completing this program students may be eligible to transfer to upper class levels in anthropology at a four-year college or university. Students should consult the catalog for the institution to which they plan to transfer in order to establish the graduation and anthropology major requirements and determine the transferability of Pima Community College courses.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**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 200	Biological Anthropology	3	**
ANT 210	Cultural Anthropology	3	ANT 102
ANT 215	The Nature of Language	3	**
ANT/ARC 225	Archaeology	3	**
ANT/ARC 275	Archaeological Excavation I	3	**

### Support Courses

BIO 109	Natural History of the Southwest	4
BUS 105	Survey of Microcomputer Uses	3
GLG 101	Introductory Geology I	4
GLG 102	Introductory Geology II	4

MAT 151	College Algebra	4	*
MAT 182	Trigonometry	3	*
ARC ELEC		9	

Complete 9 credit hours of electives after consultation with an anthropology/archaeology faculty advisor or counselor OR complete the first year of a transferable second language.

### Arizona General Education Curriculum (AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECE categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

**English Composition** 6

**Humanities and Fine Arts** 6

(Complete one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. See an anthropology faculty advisor or counselor for recommended courses.)

**Biological and Physical Sciences** 8

(GLG 101 and 102 fulfill this requirement. This requirement is completed.)

**Mathematics** 3

(MAT 151 fulfills this requirement. This requirement is completed.)

**Social and Behavioral Sciences** 6

(ANT/ARC 101 and ANT 102 fulfill this requirement. This requirement is completed.)

### Other Requirement Options

(BIO 109 and MAT 182 fulfill this requirement. This requirement is completed.)

6

### AGEC Special Requirements

\*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G) (ANT 102 fulfills this requirement. This requirement is completed.)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence (Read down.)

#### First Year:

Reading requirement  
ANT/ARC 101  
ANT 102  
MAT 151  
English composition  
Foreign language  
BUS 105  
ANT 200 level core course  
English composition  
Foreign language  
Humanities and Fine Arts requirement

#### Second Year:

GLG 101  
Humanities and Fine Arts requirement  
ANT 200 level core course  
MAT 182  
BIO 109  
ARC elective  
ANT 200 level core course  
GLG 102  
ANT/ARC 200 level core course  
ARC elective  
ANT/ARC 200 level core course

\*For additional prerequisite information, check course section.

\*\*Note: 200 level courses are not necessarily offered each semester. Consult with an anthropology faculty advisor or counselor to determine when specific courses will be offered.

## Arts, Applied

This program gives students the opportunity either to gain experience in several media or to concentrate on a single area of interest. Instruction is offered in basic design, color, drawing, painting, photography, weaving, fibers, ceramics, metalwork, printmaking, screen printing, art history and sculpture. All art classes in the program are taught by professional working artists. Students are encouraged to become involved in the art community through extracurricular activities such as the Pima Community College Art Gallery and the Visiting Artist program. Students select art electives and support courses according to their major areas of interest. Applied Arts faculty advisors or counselors are located on the West Campus.

### Applied Arts—Associate of Applied Arts Degree

Program Identification Code: AAAAPPLDARTS

#### Required Courses (60 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ART 100	Basic Design	3	
ART 110	Drawing I	3	ART 100
ART 115	Color and Composition	3	ART 100
ART 120	Sculptural Design	3	ART 100
ART 130	Art and Culture I	3	
ART 131	Art and Culture II	3	
ART ELEC	Art Electives	24	

Complete eight courses at the 100 level or higher from any of the following categories:

#### Arts and Crafts

ART 160	Ceramics I	3	*
ART 170	Metalwork I: Jewelry	3	ART 100
ART 180	Weaving I: Four-Harness Loom	3	ART 100
ART 181	Mixed Media Fibers	3	ART 100
ART 260	Ceramics II	3	ART 160
ART 261	Ceramics III	3	ART 260
ART 262	Ceramics IV	3	ART 260
ART 270	Metalwork II: Jewelry	3	ART 170
ART 271	Metalwork II: Smithing and Casting	3	ART 170
ART 280	Weaving II	3	ART 180

**Photography**

ART 140	Photography I	3	ART 100
ART 141	Photography II	3	ART 140
ART 143	Commercial Photography	3	ART 141
ART 230	History of Photography	3	

**Art History and Art Education**

ART 132	Modern Art Survey	3
ART 135	Pre-Columbian Art	3
ART 136	Masks	3

**Drawing and Sculpture**

ART 210	Drawing II	3	ART 110
ART 212	Printmaking I	3	ART 100
ART 213	Life Drawing	3	ART 100
ART 214	Printmaking II	3	ART 212
ART 215	Painting I	3	ART 110
ART 216	Screen printing I	3	ART 100
ART 217	Painting II	3	*
ART 218	Screen printing II	3	ART 216
ART 219	Printmaking III	3	ART 214
ART 220	Sculpture II	3	ART 120

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

6

WRT 101 and 102

**Analysis and Critical Thinking**

6

**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

Any AGECE categorical requirement from the Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

**Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

**Suggested Course Sequence**

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.



# Arts, Fine

## Fine Arts—Associate of Arts Degree for Transfer

Program Identification Code: AOAFINEARTS

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (62-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ART 100	Basic Design	3	
ART 110	Drawing I	3	ART 100
ART 115	Color and Composition	3	ART 100
ART 120	Sculptural Design	3	ART 100
ART 130	Art and Culture I	3	
ART 131	Art and Culture II	3	
ART 210	Drawing II		ART 110
or 213	Life Drawing	3	ART 100

### Support Courses

ART ELEC Art Electives  
Complete five courses at the 100 level or higher from any of the following categories:

#### Art in the Craft Media

ART 160	Ceramics I	3	*
ART 170	Metalwork I: Jewelry	3	ART 100
ART 180	Weaving I: Four-Harness Loom	3	ART 100
ART 181	Mixed Media Fibers	3	ART 100
ART 260	Ceramics II	3	ART 160
ART 261	Ceramics III	3	ART 260
ART 262	Ceramics IV	3	ART 260
ART 270	Metalwork II: Jewelry	3	ART 170
ART 271	Metalwork II: Smithing and Casting	3	ART 170
ART 280	Weaving II	3	ART 180

### Photography

ART 140	Photography I	3	ART 100
ART 141	Photography II	3	ART 140
ART 143	Commercial Photography	3	ART 141
ART 230	History of Photography	3	

### Art History

ART 132	Modern Art Survey	3	
ART 135	Pre-Columbian Art	3	
ART 136	Masks	3	

### Drawing, Painting, and Sculpture

ART 210	Drawing II	3	ART 110
ART 213	Life Drawing	3	ART 100
ART 215	Painting I	3	ART 110
ART 217	Painting II	3	*
ART 220	Sculpture II	3	ART 120

### Printmaking

ART 212	Printmaking I	3	ART 100
ART 214	Printmaking II	3	ART 212
ART 216	Screenprinting I	3	ART 100
ART 218	Screenprinting II	3	ART 216
ART 219	Printmaking III	3	ART 214

### Arizona General Education Curriculum

#### (AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECA, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

### English Composition

6

<b>Humanities and Fine Arts</b> (Core courses, ART 100, 110, and 130, fulfill this requirement. <u>This requirement is completed.</u> )	9
<b>Biological and Physical Sciences</b>	8
<b>Mathematics</b> (Complete MAT 142 or higher.)	3
<b>Social and Behavioral Sciences</b> (Complete courses from at least two prefixes. It is best to select courses that also fulfill the I, C, and G AGEC Special Requirements.)	6-9
<b>Other Requirement Options</b>	0-3
<b>AGEC Special Requirements</b>	*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G) \*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

#### **Suggested Course Sequence (Read down.)**

Reading requirement	ART 115	Biological and Physical
English composition	ART 120	Sciences requirements
ART 100	ART 131	ART 210 or 213
ART 110	English composition	Arts electives
ART 130	Social and Behavioral	Mathematics
Humanities and Fine	Sciences requirements	requirement*
Arts requirement	Other General Education	
	requirements	

\*For additional prerequisite information, check course section.

## **Asian Studies**

The Asian Studies program prepares graduates for further academic studies at a four-year college or university by providing a broad based, multidisciplinary, multicultural, comparative, social science approach to the study of Asia.

Students will be required to complete four semesters of an Asian language and a selection of courses designed to provide students with an introduction to the histories and cultures of Asia and the West.

Core courses in geography, history, humanities and religion will give the student a broad based, multidisciplinary introduction to the program area. Recognizing that Asia does not exist in a cultural vacuum, but, on the contrary, is and has been an integral part of world history, the program's support courses in anthropology, art, history, humanities, literature, and political science will expand the student's knowledge of Asia as well as provide background for comparative studies between Asia and the West.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer and Associate of Science degree transferability to regional universities, please refer to the chart in the front of this section.

### **Asian Studies Program—Associate of Arts Degree for Transfer**

Program Identification Code: AOANSSTUDY

#### **Required Courses (59-63 Credit Hours)**

Course Number	Course Title	Credit Hour	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
GEO 103	Cultural Geography	3	
HIS 113	Chinese Civilization	3	
HIS 114	Japanese Civilization	3	
HUM 260	Intercultural Perspectives	3	
JPN 211	Intermediate Japanese II	5	JPN 210
REL 130	Asian Religions	3	

#### **Electives**

10-14

Complete transferable electives. The Japanese language courses (JPN 110, 111, and 210) may be used as electives or any other prerequisite course to the core or general education courses.

**Support Courses**

HIS 101	Introduction to Western Civilization I	3
HIS 102	Introduction to Western Civilization II	3

**Support Electives**

(Select one course for 3 credit hours from the following list.)

ANT 102	Introduction to Cultural Anthropology and Linguistics	3	
ART 130	Art and Culture I	3	
ART 131	Art and Culture II	3	
HUM 251	Western Humanities I	3	
HUM 252	Western Humanities II	3	
LIT 267	World Literature: Narrative	3	WRT 102
POS 120	Introduction to International Relations	3	
POS 140	Introduction to Comparative Politics	3	

**Arizona General Education Curriculum****(AGEC-A) Requirements**

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECE categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

**English Composition** 6

**Humanities and Fine Arts** 9

(Core course, HUM 260, and support course, HIS 101, satisfy this requirement. Complete one course from the ART LIST.)

**Biological and Physical Sciences** 8

**Mathematics** 3  
(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 9  
(Core courses, GEO 103, HIS 113, and HIS 114 satisfy this requirement. This requirement is completed.)

**Other Requirement Options** 0  
(This requirement is completed.)

**AGECE Special Requirements**

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I) (Core course, HUM 260, satisfies this requirement. This requirement is completed.)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (c) (Core course, HUM 260, satisfies this requirement. This requirement is completed.)
3. Global diversity (G) (Core course, HIS 113, satisfies this requirement. This requirement is completed.)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

**Suggested Course Sequence (Read down.)**

Reading requirement	Support elective	JPN 211
JPN 110	English Composition	HIS 114
REL 130	HIS 102	HUM 260
Support elective	JPN 210	Support elective
English composition	HIS 113	Biological and Physical
HIS 101	Support elective	Sciences requirement
JPN 111	Math requirement	
GEO 103	Biological and Physical	
	Sciences requirement	

\*For additional prerequisite information, check course section.



## Associate of Science Degree for Transfer

(See Arizona General Education Curriculum (AGEC) for Transfer)

## Astronomy

Program Identification Code: AOSSCIENCE

A student planning on obtaining a degree with an option in Astronomy should follow the Associate of Science Degree for Transfer.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

## Automotive Technology

The automotive classes on the Downtown Campus are offered in an open-entry/open-exit, self-paced format. The program is accredited by the National Automotive Technician Education Foundation (NATEF)/Automotive Service Excellence (ASE). Students may enter classes any time of the year including summer and complete the work at their own speed according to a schedule of their own choice. Further information on course scheduling should be obtained from an automotive technology faculty advisor or counselor on the Downtown Campus.

Automotive courses meet the needs of the beginner, the technician who wants to update skills, and the do-it-yourself person. The automotive programs may also help students enter the automotive field in positions other than auto technician such as service writer, parts specialist, and automotive related sales positions. The automotive program offers a one-year certificate and a two-year Associate of Applied Science Degree with options in Mechanical Repair, Collision Repair, Painting and Refinishing, and Estimating and Shop Management.

Students in the automotive mechanics one-year certificate program are trained in general automotive repair for entry level positions. Persons who later decide to move on to the Associate of Applied Science Degree may use the certificate program courses as the first step.

All students taking Downtown Campus automotive classes must have safety glasses and work shoes.

A person majoring in automotive technology may obtain extra experience while enrolled in classes by registering for additional practice opportunities. See an automotive faculty advisor for details.

## Automotive Mechanics—Certificate for Direct Employment

Program Identification Code: CRTAUTOMECHS

### Entrance Requirements

Entry requirements for this certificate are:

- AUT 089 - Small Engine Troubleshooting and Repair
- AUT 101 - Automotive Maintenance

### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
AUT 120	Engine Diagnosis and Repair	3	
AUT 125	Tune-up and Emissions Troubleshooting	3	
AUT 128	Automotive Electrical Fundamentals and Applications	3	
AUT 132	Automotive Drivetrain Removal and Replacement	3	
AUT 139	Automotive Steering and Alignment Systems	3	
AUT 140	Automotive Brakes	3	
AUT 142	Automotive Air Conditioning	3	

### Support Course

MAN 110	Human Relations in Business and Industry	3	
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

#### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)  
TEC 113

### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See an automotive technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

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

Program Identification Code: AASAUTOTECHN

### Entrance Requirements

Entry requirements for this certificate are:

- AUT 089 - Small Engine Troubleshooting and Repair
- AUT 101 - Automotive Maintenance

### Required Courses (66 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
AUT 105	Light Line Maintenance	3	
AUT 122	Engine Remove and Install	3	
AUT 128	Automotive Electrical Fundamentals and Applications	3	
AUT 129	Automotive Electrical Accessories	3	
AUT 132	Automotive Drivetrain Removal and Replacement	3	
AUT 138	Automotive Suspension and Steering	3	
AUT 139	Automotive Steering and Alignment Systems	3	
AUT 140	Automotive Brakes	3	
AUT 142	Automotive Air Conditioning	3	

## General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

6

ASC 151 and 251

MEC 101 and SPE 120

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking

6

#### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

TEC 113

#### **Science**

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List

#### **Critical Thinking**

PHI 120

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

Choose one of the following options:

Department chair/program advisor approval is recommended in the selection of the program option.

### **Mechanical Repair**

AUT 120	Engine Diagnosis and Repair	3
AUT 124	Automotive Diesel Engine Tune-up	3
AUT 125	Tune-up and Emissions Troubleshooting	3
AUT 126	Engine Performance and Driveability Troubleshooting	3
AUT 133	Automotive Transmission/Transaxle Rebuilding	3
AUT 136	Automotive Manual Transmission and Driveline Service	3

### **Collision Repair**

AUT 150	Non-Structural Collision Repair: Panel Replacement	3
AUT 151	Non-Structural Collision Repair: Panel Straightening	3
AUT 152	Structural Collision Repair: Cutting and Welding	3
AUT 153	Structural Collision Repair: Unibody Measurement and Straightening	3
AUT 154	Structural Collision Repair: Unibody Components	3



AUT 155	Structural Collision Repair: Alloy Welding Process	3
AUT 156	Structural Collision Repair: Body-Over-Frame	3

#### Painting and Refinishing

AUT 157	Automotive Collision Repair: Non-Metal Component Repair	3
AUT 160	Automotive Collision Repair: Surface Refinish Preparation	3
AUT 161	Automotive Collision Repair: Paint Mixing and Application	3
AUT 162	Automotive Collision Repair: Solving Paint Application Problems	3
AUT 163	Automotive Collision Repair: Refinish Final Detail	3

#### Estimating and Shop Management

AUT 150	Non-Structural Collision Repair: Panel Replacement	3
AUT 153	Structural Collision Repair: Unibody Measurement and Straightening	3
AUT 158	Automotive Collision Estimating	3
AUT 161	Automotive Collision Repair: Paint Mixing and Application	3
AUT 162	Automotive Collision Repair: Solving Paint Application Problems	3
MAN 124	Small Business Management	3

#### Suggested Course Sequence

See an automotive technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Aviation Technology

The airframe and powerplant courses prepare experienced aircraft mechanics for federal airframe and powerplant certification. Course entry requires at least 30 months of experience in performing the duties of airframe and powerplant maintenance or at least 18 months of experience in performing duties that fit the desired rating. A review of experience must be made by the Downtown Campus instructor in all cases before registration. Certificates also are awarded to qualified students.

## Airframe Mechanics—Certificate for Direct Employment

Program Identification Code: CRTAFMECHANI

### Required Courses (16 Credit Hours)

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

AVM 120	Aviation Electricity	4	
AVM 220	Airframe Structures	6	*
AVM 221	Airframe Systems and Components	6	*

### Suggested Course Sequence

See an aviation technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Airframe and Powerplant Mechanics—Certificate for Direct Employment

Program Identification Code: CRTAFPOWERPLT

### Required Courses (36 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

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

AVM 105	Aircraft Sheetmetal Repair	4	
AVM 120	Aviation Electricity	4	
AVM 220	Airframe Structures	6	*
AVM 221	Airframe Systems and Components	6	*
AVM 230	Powerplant Mechanics	6	*

### Support Course

WLD 160	Arc Welding	4	
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:

ASC 151

MEC 101 or SPE 120

SPE 102 or WRT 154

WRT 101 or 107

### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

TEC 113

### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See an aviation technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Aviation Structural Repair—Certificate for Direct Employment**

Program Identification Code: CRTAVSTRUREP

The Aviation Structural Repair program will prepare people for entry level work in the alteration, modification, and repair of small through large aircraft. Training will include a sequence of structural repair courses, airframe and powerplant familiarization, metallurgy, hardware and fasteners, radome, fiberglass and composite repair.

### **Required Courses (58 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
AVM 101	Structural Repair I	4	*
AVM 102	Structural Repair II	4	AVM 101
AVM 110	Aircraft Blueprint Reading	3	
AVM 123	Airframe Familiarization	3	

AVM 150	Structural Repair III	4	AVM 102
AVM 151	Structural Repair IV	4	AVM 150
AVM 160	Aircraft Materials and Metallurgy	3	
AVM 165	Aircraft Hardware and Fasteners	3	
AVM 170	Aircraft Powerplant Familiarization	3	
AVM 203	Structural Repair V	4	*
AVM 204	Structural Repair VI	4	AVM 203
AVM 210	Advanced Composite Aircraft Repair I	5	AVM 204
AVM 250	Structural Repair VII	4	AVM 210
AVM 260	Advanced Composite Aircraft Repair II	4	AVM 250

### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:

ASC 151

MEC 101 or SPE 120

SPE 102 or WRT 154

WRT 101 or 107

### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

TEC 113

### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See an aviation technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Aviation Structural Repair—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASAVSTRUREP

The Aviation Structural Repair program will prepare people for entry level work in the alteration, modification and repair of small through large aircraft. Training will include a sequence of structural repair courses, airframe and powerplant familiarization, metallurgy, hardware and fasteners, radome, fiberglass and composite repair. The program provides an Associate of Applied Science degree.

### Required Courses (73-74 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
AVM 101	Structural Repair I	4	*
AVM 102	Structural Repair II	4	AVM 101
AVM 110	Aircraft Blueprint Reading	3	
AVM 115	Applied Aircraft Mathematics	3	
AVM 123	Airframe Familiarization	3	
AVM 150	Structural Repair III	4	AVM 102
AVM 151	Structural Repair IV	4	AVM 150
AVM 160	Aircraft Materials and Metallurgy	3	
AVM 165	Aircraft Hardware and Fasteners	3	
AVM 170	Aircraft Powerplant Familiarization	3	
AVM 203	Structural Repair V	4	*
AVM 204	Structural Repair VI	4	AVM 203
AVM 210	Advanced Composite Aircraft Repair I	5	AVM 204
AVM 250	Structural Repair VII	4	AVM 210
AVM 260	Advanced Composite Aircraft Repair II	4	AVM 250

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

TEC 113

#### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List

#### Critical Thinking

PHI 120

### Global Awareness

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other

Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See an aviation technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Biochemistry**

Program Identification Code: AOSSCIENCE

A student planning on obtaining a degree with an option in Biochemistry should follow the Associate of Science Degree for Transfer.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

## **Biology**

### **Biology—Associate of Science Degree for Transfer**

Program Identification Code: AOSSCIENCE

A student planning on obtaining a biology degree from the University of Arizona should follow the Associate of Science Degree for Transfer. Students seeking a biology degree from Arizona State University or Northern Arizona University should follow the Associate of Arts Degree for Transfer in Liberal Arts. See your transfer guide.

Students interested in pre-agriculture, pre-dental, pre-medical, pre-pharmacy and pre-veterinary subject areas should consult the catalog of the school to which they plan to apply. See a biology faculty advisor or counselor.

A student seeking a degree must take the math, writing, and reading assessment exams. The student should then meet with a biology advisor or counselor to plan courses. Students who plan to transfer to an upper division school to complete their degree should also contact an advisor or counselor from their chosen school for verification of transfer courses as soon as possible.

## **Building and Construction Technologies**

This program area provides training in building design; construction technology; residential, commercial, and industrial facilities maintenance; heating, ventilation, air conditioning, and refrigeration (HVAC-R); electrical; and plumbing. Three programs are offered:

- a certificate providing the applicant with basic skill levels for entry level helper positions in Facilities Maintenance; HVAC-R, and Electrical;
- a certificate with options in Facilities Maintenance, HVAC-R, Electrical, and Plumbing;
- an Associate of Applied Science Degree in Building and Construction Technologies with options in Building Design, Construction Technology, Facilities Maintenance, HVAC-R, Electrical, and Plumbing.

The design of the program is to get the applicants involved with the work place within six months after starting the program and continuing their education in the certificate or Associate of Applied Science Degree. This program uses the self-paced, competency-based instruction which provides open entry/open exit scheduling flexibility. This method of presentation provides the vehicle by which the applicants can demonstrate their proficiencies as outlined in required course work using both applied knowledge, hands-on techniques, and work experiences to complete the program at their own pace.

This program requires high levels of motivation, high levels of self esteem, dedication to learning, the ability to follow instructions, and excellent study habits. Program courses and advising are available at the Downtown Campus.

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

(Formerly Facility Technologies)

Program Identification Code: CRTBLDGCON-B

This program provides entry-level skills and foundations which permit an applicant to enter the work force as an entry level helper in facilities maintenance. Students can advance from this certificate to the Building and Construction Technologies Associate of Applied Science degree.

### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
BCT 104	Introduction to Equipment Maintenance	4	
BCT 106	Soldering and Brazing for Building and Construction Technologies	4	
BCT 111	Basic Safety**	1	
BCT 112	Basic Construction Mathematics**	1	
BCT 113	Hand and Power Tools**	1	
BCT 114	Blueprint Reading**	1	
BCT 115	Basic Rigging**	1	
BCT 116	Occupational Safety and Health Administration Safety Training for Building and Construction Technologies	1	

### Support Courses

BCT 118	Building and Construction Technologies Applied Mathematics I	3	*
CSA 173	Computer Fundamentals**	1	

### Suggested Course Sequence

See a building and construction technologies faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\*May be taken for credit by examination.

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

(Formerly Facility Technologies)

Program Identification Code: CRTBLDGCON-A

This program provides four options: facilities maintenance, heating, ventilation, air conditioning, and refrigeration (HVAC-R), electrical, and plumbing. This program provides advanced skill levels found in the entry level technician/journeyman levels of these crafts and trades. Applicants with this level of skills can expect to enter the work force at an intermediate pay scale with rapid advancement based on demonstrated skills required in the area of concentration taken. This level of employment requires good basic reading, writing, math and area of concentration skills. In addition, it requires good work habits and the ability to follow instructions given by employers and more advanced technicians/journeymen in supervisory positions in order to be successful in the workplace. This certificate is a career ladder step to the Building and Construction Technologies Associate of Applied Science Degree.

### Required Courses (40-42 Credit Hours)

Course Number	Course Title	Hours	Credit Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
BCT 111	Basic Safety**	1	
BCT 112	Basic Construction Mathematics**	1	
BCT 113	Hand and Power Tools**	1	
BCT 114	Blueprint Reading**	1	
BCT 115	Basic Rigging**	1	
BCT 116	Occupational Safety and Health Administration Safety Training for Building and Construction Technologies	1	

### Support Course

CSA 173	Computer Fundamentals	1	
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

Choose 3 credit hours from the following list:  
 ASC 151  
 SPE 102 or WRT 154  
 WRT 101 or 107

**Analysis and Critical Thinking**

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

**Mathematics**

MAT 100 level or higher (except MAT 198)

**Critical Thinking**

PHI 120

Choose one of the following options:

(Department chair or faculty advisor approval is recommended in the selection of the option.)

**Facilities Maintenance**

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 106	Soldering and Brazing for Building and Construction Technologies	4		
BCT 124	Gas Furnace Heating	4		
BCT 125	Electrical Theory and Applications	4		
BCT 126	HVAC Electricity, Circuitry, and Controls	4	*	
BCT 127	HVAC Systems Applications	4	*	
BCT 130	EPA Clean Air Act: Section 608	1		BCT 103

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

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 106	Soldering and Brazing for Building and Construction Technologies	4		
BCT 125	Electrical Theory and Applications	4		
BCT 126	HVAC Electricity, Circuitry, and Controls	4	*	
BCT 127	HVAC Systems Applications	4	*	
BCT 128	HVAC Systems Service and Repair	4		BCT 127
BCT 130	EPA Clean Air Act: Section 608	1		BCT 103

**Electrical**

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		

BCT 125	Electrical Theory and Applications	4		
BCT 126	HVAC Electricity, Circuitry, and Controls	4	*	
BCT 135	National Electrical Code Wiring Applications	4		BCT 125
BCT 225	Electrical Distribution and Motor Controls for Buildings	4		BCT 126
<b>Plumbing</b>				
BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 106	Soldering and Brazing for Building and Construction Technologies	4		
BCT 125	Electrical Theory and Applications	4		
BCT 150	Facilities Maintenance: Plumbing	4		
BCT 161	Residential and Industrial Plumbing I	4	*	
BCT 283	Uniform Plumbing Code for Building and Construction Technologies	3		

**Suggested Course Sequence**

See a building and construction technologies faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\* May be taken for credit by examination.

**Building and Construction Technologies—Associate of Applied Science Degree for Direct Employment**

(Formerly Facility Technologies)

Program Identification Code: AASBLDGCONST

This degree provides for six building and construction options: Building Design, Construction Technology, Facilities Maintenance, Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC-R), Electrical, and Plumbing.

**Suggested Entrance Requirements:** Entry requirements for the Associate of Applied Science degree are REA 081, WRT 100, and MAT 082 or BCT 060. Students should have successfully completed course work or assessments within the first year of the program.

**Required Courses (60-69 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.



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

BCT 111	Basic Safety**	1
BCT 112	Basic Construction Mathematics**	1
BCT 113	Hand and Power Tools**	1
BCT 114	Blueprint Reading**	1
BCT 115	Basic Rigging**	1
BCT 116	Occupational Safety and Health Administration Safety Training for Building and Construction Technologies	1

#### **Support Course**

CSA 173	Computer Fundamentals	1
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#### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### **Communication**

6

ASC 151 and 251  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

#### **Analysis and Critical Thinking**

6

##### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)  
TEC 113

##### **Critical Thinking**

PHI 120

#### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the

courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

#### **Choose one of the following options:**

(Department chair or faculty advisor approval is recommended in the selection of the program option.)

#### **Building Design**

BCT 101	Principles of Construction	4
BCT 102	Building Materials	3
CAD 101	Computer Aided Drafting Fundamentals	4

#### **Support Courses**

Support Electives 8

Complete 8 credit hours from the following list:

CAD 155, 156, 157

Trades/Fieldwork Electives 10

Complete 10 credit hours from the following list:

BCT, LTP, WLD

Technical Electives 6

Complete 6 credit hours from the following list:

(Courses cannot be duplicated from the Support electives or Trade/Fieldwork electives.)

BCT, CAD, DES, ENG, LTP

**Construction Technology**

BCT 101	Principles of Construction	4	
BCT 102	Building Materials	3	
CAD 101	Computer Aided Drafting Fundamentals	4	

**Support Courses**

Support Electives 4

Complete 4 credit hours from the following list:

CAD 156, 157

**Trades/Fieldwork Electives**

Complete 10 credit hours from the following list: 10

BCT, LTP, WLD

**Technical Electives**

Complete 10 credit hours from the following list: 10

(Courses cannot be duplicated from the Support electives or Trade/Fieldwork electives.)

BCT, CAD, DES, ENG, LTP

**Facilities Maintenance**

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 106	Soldering and Brazing for Building and Construction Technologies	4		
BCT 124	Gas Furnace Heating	4		
BCT 125	Electrical Theory and Applications	4		
BCT 126	HVAC Electricity, Circuitry, and Controls	4	*	
BCT 127	HVAC Systems Applications	4	*	
BCT 130	EPA Clean Air Act: Section 608	1		BCT 103
BCT 150	Facilities Maintenance: Plumbing	4		
BCT 225	Electrical Distribution and Motor Controls	4		BCT 126
BCT 280	Uniform Building Code for Building and Construction Technologies I	3		
BCT 281	Uniform Building Code for Building and Construction Technologies II	3		BCT 280

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

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 106	Soldering and Brazing for Building and Construction Technologies	4		
BCT 124	Gas Furnace Heating	4		
BCT 125	Electrical Theory and Applications	4		
BCT 126	HVAC Electricity, Circuitry, and Controls	4	*	
BCT 127	HVAC Systems Applications	4	*	

BCT 128	HVAC Systems Service and Repair	4		BCT 127
BCT 130	EPA Clean Air Act: Section 608	1		BCT 103
BCT 150	Facilities Maintenance: Plumbing	4		
BCT 222	Commercial HVAC Systems	4	*	
BCT 223	Pneumatic HVAC Controls	3	*	

**Electrical**

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 124	Gas Furnace Heating	4		
BCT 125	Electrical Theory and Applications	4		
BCT 126	HVAC Electricity, Circuitry, and Controls	4	*	
BCT 135	National Electrical Code Wiring Applications	4		BCT 125
BCT 171	Building and Construction Technologies Apprenticeship I	4	*	
BCT 172	Building and Construction Technologies Apprenticeship II	4		BCT 171
BCT 173	Building and Construction Technologies Apprenticeship III	4		BCT 172
BCT 225	Electrical Distribution and Motor Controls	4		BCT 126

**Plumbing**

BCT 103	Principles and Concepts for HVAC	4	*	
BCT 104	Introduction to Equipment Maintenance	4		
BCT 106	Soldering and Brazing for Building and Construction Technologies	4		
BCT 124	Gas Furnace Heating	4		
BCT 125	Electrical Theory and Applications	4		
BCT 150	Facilities Maintenance: Plumbing	4		
BCT 161	Residential and Industrial Plumbing I	4	*	
BCT 162	Residential and Industrial Plumbing II	4		BCT 161
BCT 163	Residential and Industrial Plumbing III	4		BCT 162
BCT 242	Cross-Connection Control	3		BCT 150
BCT 283	Uniform Plumbing Code for Building and Construction Technologies	3		

**Suggested Course Sequence**

See a building and construction technologies faculty advisor.

\*For additional prerequisite information, check course section.

\*\*May be taken for credit by examination.

# Business

The Business programs are designed to meet the goals of students:

- interested in exploring business as a career
- desiring appropriate skills to enter the business field
- needing skills to aid in opening a small business
- planning to transfer to a four-year institution as a business major

The certificate/degrees include:

- A **certificate** designed to introduce the student to basic business courses
- A **certificate** for direct employment enabling students to seek job entry level positions in business
- An **Associate of Applied Science degree** with a specialty in management or marketing for students seeking employment after graduation
- An **Associate of Science degree** in business administration for students intending to transfer to Arizona State University, Northern Arizona University, the University of Arizona, or the University of Phoenix
- An **Associate of Science degree** in retailing for students wishing to transfer to the University of Arizona

## Basic Business—Certificate For Direct Employment

Program Identification Code: CRTBUSINES-B

### Required Courses (15 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ACC 100	Practical Accounting Procedures	3	
BUS 100	Introduction to Business	3	
BUS 151	Mathematics of Business	3	*
MAN 110	Human Relations in Business and Industry	3	
ASC 151 or WRT	Business English Determined by assessment test score	3	*

### Suggested Course Sequence

See a business faculty advisor.

\*For additional prerequisite information, check course section.

## Advanced Business—Certificate For Direct Employment

Program Identification Code: CRTBUSINES-A

### Required Courses (33 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	*
MAN 110	Human Relations in Business and Industry	3	
MKT 111	Marketing	3	

### Support Courses

BUS 100	Introduction to Business	3	
BUS 105	Survey of Microcomputer Uses	3	
BUS 151	Mathematics of Business	3	*
BUS 200	Business Law I		
or 220	Legal Environment of Business	3	
MAN 280	Business Organization and Management	3	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 3

Choose 3 credit hours from the following list:

WRT 154  
WRT 101 or 107

### Analysis and Critical Thinking 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)  
If MAT is met by assessment then choose one course from science or critical thinking course lists.

**Science**

Any AGECE categorical requirement from the Biological/Physical Science list.

**Critical Thinking**

PHI 120

**Suggested Course Sequence**

See a business faculty advisor.

\*For additional prerequisite information, check course section.

## Business—Associate of Applied Science Degree For Direct Employment

Program Identification Code: AASBUSINESS

**Required Courses (66 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	*
BUS 100	Introduction to Business	3	
BUS 105	Survey of Microcomputer Uses	3	
BUS 151	Mathematics of Business	3	*
BUS 200	Business Law I		
or 220	Legal Environment of Business	3	
ECN 200	Principles of Economics	3	
MAN 110	Human Relations in Business and Industry	3	
MAN 280	Business Organization and Management	3	*
MKT 111	Marketing	3	

**Support Courses**

Electives	Select 6 credit hours from the following: ACC, BUS, CSC, FIN, IBS, MAN, MKT	6	
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**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year

**only.** Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking**

6

**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

Any AGECE categorical requirement from the Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

**Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher, selected course must have a C or G designation.

**Social and Behavioral Sciences**

BUS 210

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

Options      Select a minimum of 12 credit hours from either Option A or B.

#### Option A - Management Specialty

MAN 122	Supervision	3	
MAN 124	Small Business Management	3	
MAN 270	Computer Applications for Managers	3	
MAN 276	Human Resources	3	BUS 100
MAN 278	Labor/Management Relationships	3	BUS 100

#### Option B - Marketing Specialty

MKT 113	Professional Sales	3	
MKT 125	Advertising	3	
MKT 139	Retailing	3	
MKT 150	Physical Distribution Management	3	
MKT 299	Co-op Related Class in MKT	1	
MKT 299	Co-op Related Work in MKT	3	

### Suggested Course Sequence

See a business faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Business Administration—Associate of Business Administration (ABUS) For Transfer

Program Identification Code: AOBBUSIADMIN

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor.

The business administration degree program for transfer prepares students for a university bachelor's degree program in business administration. The options lead to majors in accounting, business administration, business computing management/management information systems, business economics, finance, international business, management, and marketing.

This degree fulfills lower-division general education and major requirements for the B.S Degree in Business Administration at The University of Arizona, University of Phoenix, Arizona State University, and Northern Arizona University. It may also transfer into business programs at other universities. See your business advisor or counselor.

For additional information on degree transferability to regional universities, please refer to the chart in the front section of this catalog. Students should check with program faculty advisor or counselors for further information.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	ACC 101
BUS 205	Statistical Methods in Economics and Business	3	MAT 172
BUS 220	Legal Environment of Business	3	
CSC 100	Introduction to Computers and Information Systems	3	MAT 092
ECN 201	Microeconomic Principles	3	MAT 092
ECN 202	Macroeconomic Principles	3	MAT 092
MAT 151	College Algebra	4	*
MAT 172	Finite Mathematics	3	*
MAT 212	Topics in Calculus	3	MAT 151
<b>Business Electives</b>		6	

Complete transferrable electives. Electives could include prerequisite courses to your business courses or general education courses. See your business advisor or counselor.

## Arizona General Education Curriculum

### (AGEC-B) Requirements

35

(See General Education section of this catalog for Transfer General Education course list.)

By completing the general education portion of this degree (AGEC-B), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-B is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECE categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 6

(Complete one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses that also fulfill the I, C, and G AGECE Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(MAT 212 fulfills this requirement. This requirement is completed.)

**Social and Behavioral Sciences** 6

(ECN 201 fulfills this requirement. Complete one additional non-ECN course from this list.)

**Other Requirement Options** 6

(MAT 151 and 172 fulfill this requirement. This requirement is completed.)

**AGECE Special Requirements** \*

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a business/public administration faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Business Administration—Retailing—Associate of Arts Degree for Transfer in Liberal Arts

Program Identification Code: AOABUSADRETL

Retailing is selling goods and services to final consumers. The retail industry includes food and fashion, soft goods and hard goods, services retailing, merchandise planning, advertising and promotion, and international retailing. Career opportunities exist such as entrepreneur, department/store manager, buyer, merchandise analyst, visual/fashion merchandise, wholesaler showroom manager, catalog manager, mall manager, district/regional manager, and general merchandise manager.

The courses in this program meet the University of Arizona lower divisional requirements for a bachelor of science degree in family and consumer resources with a major in retailing and consumer studies. In completion of upper division requirements, students may specialize in international retailing, visual merchandising or food retailing as well as work with a major retailer in a paid summer or semester internship program.

Students without retail experience are encouraged to either apply for admission to a marketing cooperative education program or independently attain employment in a retail establishment.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor or counselor. The courses offered in this program meet the University of Arizona requirements for the first two years. The student needs to select either the bachelor of arts or a bachelor of science degree option. See an advisor or counselor for choice of options listed below.



**Required Courses (61-64 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ACC 101	Financial Accounting	3	
BUS 105	Survey of Microcomputer Uses	3	
DES 111	Fundamentals of Design	3	
ECN 201	Microeconomic Principles	3	MAT 092
ECN 202	Macroeconomic Principles	3	MAT 092
MAT 151	College Algebra	4	*
MAT 167	Introductory Statistics	3	*
MKT 139	Retailing	3	
ELEC	Complete two of the following courses:	6	
MAN 124	Small Business Management		
MKT 113	Professional Sales		
MKT 150	Physical Distribution Management		

**Support Courses**

PSY 101	Introduction to Psychology	4	
SOC 101	Introduction to Sociology	3	

**Business Elective**

Complete transferrable electives. See the UA transfer guide.

**Arizona General Education Curriculum**

**(AGEC-A) Requirements** 35  
(See General Education section of this catalog for Transfer General Education course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECA, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

**English Composition** 6

**Humanities and Fine Arts** 6

(Complete one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses that also fulfill the I, C, and G AGECA Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(MAT 151 fulfills this requirement. This requirement is completed.)

**Social and Behavioral Sciences** 9

(ECN 201, ECN 202, and PSY 101 fulfill this requirement. This requirement is completed.)

**Other Requirement Options** 3

(MAT 167 fulfills this requirement. This requirement is completed.)

**AGECA Special Requirements** \*

A student is required to fulfill each of the following AGECA Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECA Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

**Suggested Course Sequence**

See a business faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# International Business Studies

Pima College offers an Associate of Applied Science degree (AAS).

This program area is designed to meet the needs of business and industry by providing education and training with the following emphases: (1) preparing the student for employment in an international setting, (2) upgrading the skills of students currently employed in a company with international operations and (3) preparing the student for a foreign assignment.

The degree program covers the following areas: language training, cross-cultural training for the business and/or social environment, training for living in a foreign country, culture shock training, training to develop skills in handling everyday transactions of international trade and training for hosting foreign business personnel. In addition the degree encompasses business course offerings and general education requirements.

Courses in these programs are structured to accommodate content for any country or geographic region. The acculturation portion of the program should be taken by family members of employees anticipating a foreign assignment. For transcript purposes, each IBS course will show the actual foreign country or region studied.

## International Business Studies—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASINTLBUSIN

### Required Courses (62-65 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

BUS 210	International Business	3
FOR/LANG	Foreign Language Electives	4-5
	Complete one of the following courses:	
	FRE 110	
	GER 110	
	ITA 110	
	JPN 110	
	RUS 110	
	SPA 110	

IBS 120	Cultural Similarities and Differences Between the United States and the Foreign Country	3	
IBS 135	The International Career	1	
IBS 136	Global Economy	3	
IBS 140	Basic Techniques of Intn'l Trade	3	
IBS 160	Hosting Foreign Business Personnel	1	
IBS 170	Doing Business with Mexico	1	
MAN 280	Business Organization and Mgmt	3	*
MKT 111	Marketing	3	

### Support Courses

ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	*
BUS 105	Survey of Microcomputer Uses	3	
BUS 151	Mathematics of Business		*
BUS 200	Business Law I	3	
MAN 110	Human Relations in Business/Industry	3	
Electives	Complete two of the following:	4-6	
ANT 102			
MAN 122, 124			
MKT 113, 125, 150			
POS 120			

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 6

SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102

### Analysis and Critical Thinking 6

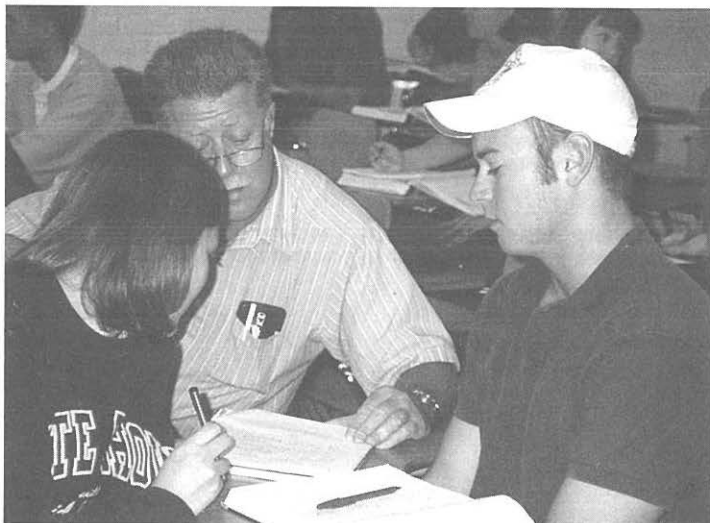
#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### Critical Thinking

PHI 120



### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language, second course in the language sequence

### Social and Behavioral Sciences

ECN 201 or 202

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a business advisor or counselor.

\*For additional prerequisite information, check course section.

## Finance

Pima Community College works jointly with many financial institutions in the Tucson area to offer two-year Associate of Applied Science degrees. These programs allow for many specialty options within the finance industry, including banking, and credit unions. Certificate programs are also offered in the credit union area.

### **Banking—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASBANKING

#### **Required Courses (60 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ACC 101	Financial Accounting	3	
ECN 202	Macroeconomic Principles	3	MAT 092
FIN 102	Principles of Bank Operations	3	
FIN 208	Installment Credit		
or			
MAN 280	Business Organization and Management	3	*

#### **Support Courses**

BUS 200	Business Law I	3	
ECN 201	Microeconomic Principles	3	MAT 092
MAN 122	Supervision	3	
BANK ELEC	Banking Electives	12	
Complete 12 credit hours at the 100 level or higher from FIN courses and/or other courses relating to the banking industry.			

Other Electives	9		
Complete 9 credit hours at the 100 level or higher from: ANT, HIS, HUM, PHI, PSY, SOC			

#### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements

are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### **Communication**

6

ASC 151 and 251  
MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### **Analysis and Critical Thinking**

6

#### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking. MAT 100 level or higher (except MAT 198)

#### **Science**

Any AGECE categorical requirement from the Biological/Physical Science List

#### **Critical Thinking**

PHI 120

### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See a finance faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Basic Credit Union—Certificate for Direct Employment**

Program Identification Code: CRTCRDUNIN-B

### **Required Courses (15 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
FIN 131	Principles of Credit Unions	3	
FIN 139	Credit Union Accounting	3	
FIN 208	Installment Credit	3	
FIN 231	Credit Union Operations	3	

### **Support Course**

MKT 113	Professional Sales	3	
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### **Suggested Course Sequence (Read down.)**

FIN 131  
FIN 139  
FIN 208  
FIN 231  
MKT 113

## Advanced Credit Union—Certificate for Direct Employment

Program Identification Code: CRTCRDUNIN-A

### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

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

FIN 131	Principles of Credit Unions	3	
FIN 139	Credit Union Accounting	3	
FIN 205	Real Estate Finance	3	
FIN 208	Installment Credit	3	
FIN 231	Credit Union Operations	3	

### Support Course

MKT 113	Professional Sales	3	
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 3

Choose 3 credit hours from the following list:

SPE 102 or WRT 154

WRT 101 or 107

**Analysis and Critical Thinking** 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

**Financial Management Elective** 3

Complete one course from the following list:

FIN 124 Tax Management and Planning

FIN 217 Analyzing Financial Statements

**Financial Counseling Elective** 3

Complete one course from the following list:

ECN 136	Personal and Family Finance
FIN 121	Introduction to Personal Financial Planning
FIN 123	Personal Investment Strategies
FIN 136	Investments and Family Financial Management

### Suggested Course Sequence

See a financial faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Credit Union—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASCREDUNION

### Required Courses (63 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

FIN 131	Principles of Credit Unions	3	
FIN 139	Credit Union Accounting	3	
FIN 205	Real Estate Finance	3	
FIN 208	Installment Credit	3	
FIN 231	Credit Union Operations	3	FIN 131
FIN 239	Credit Union Financial Management	3	*

### Support Courses

ACC 101	Financial Accounting	3	
BUS 200	Business Law		
or 220	Legal Environment of Business	3	
CSC 105	Survey of Microcomputer Uses	3	
MKT 113	Professional Sales	3	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year

**only.** Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking** 6

**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

Any AGEC categorical requirement from the Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

**Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

ECN 200

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy** 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

**Financial Management Elective** 3

Complete one course from the following list:

FIN 124 Tax Management and Planning  
FIN 217 Analyzing Financial Statements

**Financial Counseling Elective** 3

Complete one course from the following list:

ECN 136 Personal and Family Finance  
FIN 121 Introduction to Personal Financial Planning  
FIN 123 Personal Investment Strategies  
FIN 136 Investments and Family Financial Management

**Human Resources Management Elective** 3

Complete one course from the following list:

MAN 110 Human Relations in Business and Industry  
MAN 276 Human Resources  
MAN 278 Labor/Management Relations  
BUS 100  
BUS 100

**Management Elective** 3

Complete one course from the following list:

MAN 122 Supervision  
MAN 130 Quality Systems Management  
MAN 280 Business Organization and Management  
MAT 092  
BUS 100

**Marketing Elective** 3

Complete one course from the following list:

MKT 111 Marketing  
MKT 125 Advertising

**Suggested Course Sequence**

See a financial faculty advisor or counselor.

\*For additional prerequisite information, check course section.



# Chemistry

## Chemistry—Associate of Science Degree for Transfer

Program Identification Code: AOSSCIENCE

A student planning on obtaining a chemistry degree should follow the Associate of Science Degree for Transfer. A student seeking a degree must take the math, writing, and reading assessment exams. The student should then meet with a chemistry faculty advisor or counselor to plan courses. The student who plans on transferring to an upper division school to complete his/her degree should also contact an advisor or counselor from their chosen school for verification of transfer courses.

## Chemistry-Environmental Science

Students who are interested in an environmental science transfer degree should consult the section in the catalog under Environmental Technology—Associate of Arts Degree for Transfer in Liberal Arts.

# Communication Graphics

Programs in communication graphics prepare students for direct employment in the field. Their training may include basic drawing, color rendering and advanced figure drawing, graphic design, desktop publishing and computer graphics with Macintosh computers and current software, production techniques, and portfolio development. Specialized training is also offered in cartooning, television commercial design, airbrush techniques, and package design. Two credentials are offered: a certificate and an Associate of Applied Science degree. The certificate course work satisfies core and some general education course work for the Associate of Applied Science degree.

The following basic courses are entry requirements into the advanced certificate or Associate of Applied Science degree:

- CGR 100 Basic Drawing
- CGR 110 Visual Communication
- CGR 020 Basic Macintosh for Computer Graphics or
- CGR 120 Applied Computer Graphics

The Associate of Applied Science degree provides five options - design, illustration, multimedia, and production art and web design.

Program courses and advising are offered on the Downtown Campus.

## Communication Graphics—Certificate for Direct Employment

Program Identification Code: CRTCOMMGRAPH

This certificate introduces students to the skills required for entry level positions in Graphic Design, Illustration, and Production. Entry requirements for this certificate are CGR 100, 110, and 020 or 120. These courses satisfy core and some general education Associate of Applied Science Degree requirements.

### Required Courses (44-46 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CGR 101	Color Rendering	4	CGR100
CGR 111	Typography	3	*
CGR 112	Graphic Design I	4	*
CGR 121	Desktop Publishing for Communication Graphics: PageMaker		*
or 220	Desktop Publishing for Communication Graphics: QuarkXpress	4	*
CGR 122	Desktop Graphics: Adobe Illustrator		*
or 224	Desktop Graphics: Macromedia Freehand	4	*
CGR 130	Production Techniques/Processes I	3	*
CGR 201	Figure Drawing I	4	CGR100
CGR 202	Figure Drawing II		CGR201
or 214	Communication Graphics Business and Portfolio	2-4	CGR112
CGR 210	Graphic Design II	3	CGR112
CGR 221	Photo Image Editing: Adobe Photoshop	4	*

### Support Course

GRA 111	Introduction to Offset Printing	3
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:

- ASC 151
- MEC 101 or SPE 120
- SPE 102 or WRT 154
- WRT 101 or 107



### **Analysis and Critical Thinking**

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### **Mathematics**

MAT 100 level or higher (except MAT 198)

### **Science**

Any AGECE categorical requirement from the Biological/Physical Science list.

Critical Thinking

PHI 120

### **Suggested Course Sequence**

See a communication graphics faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Communication Graphics—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASCOMMGRAPH

This program trains students for careers in Design, Illustration, Multimedia, Production Art, and Web Design. Entry requirements for the Associate of Applied Science Degree are CGR 100, 110, and 020 or 120. The certificate course work satisfies requirements toward this degree.

### **Required Courses (69-72 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CGR 101	Color Rendering	4	CGR 100
CGR 111	Typography	3	*
CGR 112	Graphic Design I	4	*
CGR 121	Desktop Publishing for Communication Graphics: PageMaker		*
or 220	Desktop Publishing for Communication Graphics: QuarkXpress	4	*
CGR 122	Desktop Graphics: Adobe Illustrator		*
or 224	Desktop Graphics: Macro. Freehand	4	*
CGR 130	Production Techniques and Processes I	3	*
CGR 201	Figure Drawing I	4	CGR 100
CGR 210	Graphic Design II	3	CGR 112
CGR 214	Communication Graphics Business and Portfolio	2	CGR 112
CGR 221	Photo Image Editing: Adobe Photoshop	4	*

### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### **Communication**

6

ASC 151 and 251

MEC 101 and SPE 120

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### **Analysis and Critical Thinking**

6

#### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### **Science**

Any AGECE categorical requirement from the Biological/Physical Science List

#### **Critical Thinking**

PHI 120

### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

CGR 250

#### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list, just have a C or G designation.

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

Complete one of the following options:

### **Design**

CGR 121

Desktop Publishing for  
Communication Graphics: PageMaker

\*

or 220

Desktop Publishing for Communication

Graphics: QuarkXpress

4

\*

CGR 211

Graphic Design III

3

CGR 210

CGR 230

Production Techniques and

Processes II

4

\*

CGR 256

Web Design

4

\*

GRA 111

Introduction to Offset Printing

3

### **Illustration**

CGR 140

Illustration I

3

\*

CGR 142

Airbrush Techniques I

CGR 100

or 203

Figure Drawing III

3-4

CGR 202

CGR 202

Figure Drawing II

4

CGR 201

CGR 223

Computer Painting

4

\*

CGR 240

Illustration II

3

CGR 140

### **Multimedia**

CGR 202

Figure Drawing II

4

CGR 201

CGR 223

Computer Painting

4

\*

CGR 251

Computer 3D Animation

4

CGR 122

CGR 252

Computer Multimedia Design I

4

\*

### **Production Art**

CGR 230

Production Techniques and

Processes II

4

\*

CGR 231

Production Techniques and

Processes III

4

CGR 230

CGR 232

Production Techniques and

Processes IV

4

CGR 231

GRA 111

Introduction to Offset Printing

3

### **Web Design**

CGR 222

Advanced Photo Image Editing:

Adobe Photoshop

4

CGR 221

CGR 252

Computer Multimedia Design I

4

\*

CGR 256

Web Design

4

\*

CGR 257

Advanced Web Design

4

CGR 256

### **Suggested Course Sequence**

See a communication graphics faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Computer Aided Drafting Technology

This two-year program, which leads to an Associate of Applied Science degree, allows the students to develop skills which prepare them for careers in Computer Aided Drafting (CAD) as found in several types of industry. Also available are CAD certificates in Electro-Mechanical and Construction Drafting.

## Computer Aided Drafting, Electro-Mechanical/Mechanical—Certificate for Direct Employment

Program Identification Code: CRTELECMECHN

### Required Courses (31-32 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CAD 101	Computer Aided Drafting Fundamentals	4	
CAD 152	Technical Drafting	4	CAD 101
CAD 153	Electronic Drafting	4	CAD 101
CAD 162	Mechanical Design I	4	*

### Support Courses

DFT 105	Manufacturing Processes I	3	
MAC 104	Applied Shop Mathematics II	3	MAC 103
Technical Electives		3-4	
Complete one of the following:			
CAD 163, 172, 199, 299, ENG (any course),			
MAC 110			

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:  
SPE 102 or WRT 154  
WRT 101 or 107

### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

### Science

MAC 275

Any AGEC categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a computer aided drafting faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Basic Computer Aided Drafting for Construction—Certificate for Direct Employment

Program Identification Code: CRTCONDRFT-B

### Required Courses (15-16 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CAD 101	Computer Aided Drafting Fundamentals	4	
CAD 155	Residential Design/Drafting		CAD 101
or 156	Commercial Design/Drafting I	4	*
CAD 157	Site Development Design/Drafting	4	*

### Support Courses

Technical Electives 3-4  
Complete 3-4 credit hours at the 100 level or higher from the following list with the approval of the department chair or faculty advisor:  
BCT, CAD, DES, ENG, or LTP

### Suggested Course Sequence

See a computer aided drafting faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Advanced Computer Aided Drafting for Construction— Certificate for Direct Employment

Program Identification Code: CRTCONDFT-A

### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CAD 101	Computer Aided Drafting Fundamentals	4	
CAD 155	Residential Design/Drafting	4	CAD 101
CAD 156	Commercial Design/Drafting I	4	*
CAD 157	Site Development Design/Drafting	4	*

### Support Courses

Technical Electives 8  
Complete 8 credit hours at the 100 level or higher from any of the following list with the approval of the department chair or faculty advisor:  
BCT, CAD, DES, ENG, or LTP courses

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

Choose 3 credit hours from the following list:  
SPE 102 or WRT 154  
WRT 101 or 107

### Analysis and Critical Thinking

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a computer aided drafting faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Computer Aided Drafting Technology—Associate of Applied Science Degree

Program Identification Code: AASELECMECHN

This degree provides for four options: Electro-Mechanical, Mechanical, Technical Illustration, and Construction.

The electro-mechanical drafting plan involves drafting and design fundamentals used in the electronics manufacturing industry utilizing manual and Computer Aided Drafting (CAD) tools. The mechanical option involves drafting and design fundamentals used in the manufacturing industry utilizing manual and CAD tools. The technical illustration option involves the merging of artistic and mechanical aspects of drafting and design utilizing manual and CAD tools. The construction option involves the preparation and/or use of working drawings for construction projects utilizing manual and CAD tools.

**Suggested Entrance Requirements:** Entry requirements for the Associate of Applied Science degree are REA 081, WRT 100, and MAT 086. Students should have successfully completed course work or assessments within the first year of the program.

### Required Courses (63-69 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CAD 101 Computer Aided Drafting Fundamentals 4

### Support Courses

BCT 118 Building and Construction Technologies Applied Mathematics I  
or MAC 103 Applied Shop Mathematics I 3 \*

**Choose one of the following drafting options:**

(Department chair or faculty advisor approval is recommended in the selection of the program option.)

**Electro-Mechanical:**

CAD 152	Technical Drafting	4	CAD 101
CAD 153	Electronic Drafting	4	CAD 101
CAD 162	Mechanical Design I	4	*
CAD 163	Electronic Design	4	*
CAD 172	Geometric Dimension and Tolerancing	3	*
CAD 203	Electro-Mechanical Design	4	*
CAD 253	Microelectronic Design	4	*
CAD 280	Portfolio	3	*
DFT 105	Manufacturing Processes I	3	
DFT 110	Manufacturing Processes II	3	

Technical Electives 6-8

Complete 6-8 credits from the following list with the approval of the department chair or faculty advisor:

CAD 199, 296, 299, ENG (any course), MAC 100, 110, WLD 150, 160

**Mechanical:**

CAD 152	Technical Drafting	4	CAD 101
CAD 153	Electronic Drafting	4	CAD 101
CAD 162	Mechanical Design I	4	*
CAD 163	Electronic Design	4	*
CAD 172	Geometric Dimension and Tolerancing	3	*
CAD 202	Mechanical Design II	4	*
CAD 252	Mechanical Design III	4	CAD 202
CAD 280	Portfolio	3	*
DFT 105	Manufacturing Processes I	3	
DFT 110	Manufacturing Processes II	3	

Technical Electives 6-8

Complete 6-8 credits from the following list with the approval of the department chair or faculty advisor:

CAD 199, 296, 299, ENG (any course), MAC 100, 110, WLD 150, 160

**Technical Illustration:**

CAD 152	Technical Drafting	4	CAD 101
CAD 162	Mechanical Design I	4	*
CAD 202	Mechanical Design II	4	*
CGR 100	Basic Drawing	4	
CGR 121	Desktop Publishing for Communication Graphics: PageMaker	4	*
CGR 122	Desktop Graphics: Adobe Illustrator	4	*
CGR 221	Photo Image Editing: Adobe Photoshop	4	*
CGR 251	Computer 3D Animation	4	CGR 122
DFT 105	Manufacturing Processes I	3	

Technical Electives 4

Complete 4 credit hours from the following list:

CAD 163, 252, CGR 130, 142, 230, 242, 250, 256

**Construction:**

BCT 101	Principles of Construction	4	
BCT 102	Building Materials	3	
BCT 204	Construction Surveying	3	MAT 110
CAD 155	Residential Design and Drafting	4	CAD 101
CAD 156	Commercial Design and Drafting I	4	*
CAD 157	Site Development Design and Drafting	4	*
CAD 206	Commercial Design and Drafting II		CAD 156
or BCT 190	Field Work for Construction	4	*

Technical Electives 12

Complete 12 credit hours from the following list with the approval of the department chair or faculty advisor: BCT, CAD, DES, ENG, LTP, or apprentice related instruction

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking** 6

**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List



### **Critical Thinking**

PHI 120

### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

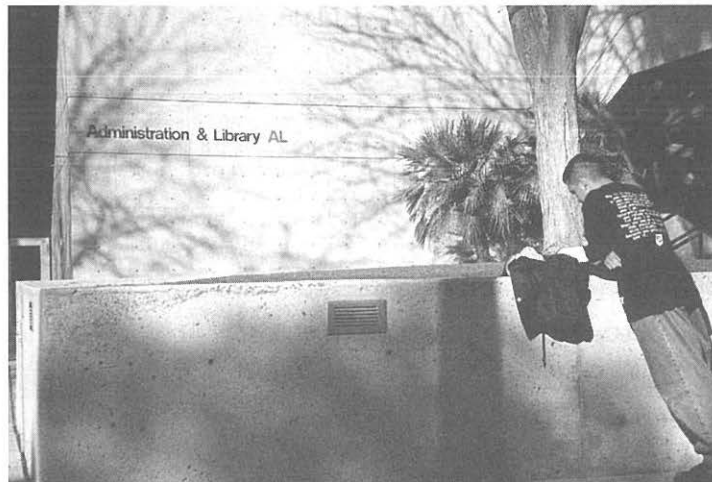
This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See a computer aided drafting faculty advisor.

\*For additional prerequisite information, check course section.



## **Computer Science**

These programs are designed both to prepare students for employment in the field, mainly as computer programmers and to provide transfer courses for those wishing to enroll at a four-year college. In addition, they enable those already employed in the field to upgrade their skills and they provide personal interest courses to meet the community's needs. The program options provide a full range of computer science skills, including computer literacy, data entry, programming, computer operations and systems analysis and design. For data entry see Administrative Support Careers program. The following programs are offered:

Computer Programming Specialist

- Certificate for Direct Employment

Small Computer Systems Administrator

- Associate of Applied Science Degree For Direct Employment

Computer Programmer/Analyst

- Associate of Applied Science Degree For Direct Employment

Computer Science

- Associate of Science Degree For Transfer

Web Technologies

- Certificate for Direct Employment

## Computer Programming Specialist—Certificate for Direct Employment

Program Identification Code: CRTCMPPRGSP

This program offers the skills needed for employment as an entry-level programming specialist in a computer language or area of applications. In addition, it enables experienced professionals to upgrade and expand their skills and employment opportunities. Students seeking this certificate are expected to be highly skilled in the use of computers (equivalent to CSC 100 or 105). Experienced students will be given the opportunity to test out of CSC 100 or request waiver of prerequisites by the Computer Science Department. Students may seek certificates in each of the programming options listed below.

### Required Courses (16-26 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

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

#### Option I: Programming in C

CSC 130	Programming Fundamentals		*
or 131	Computer Science Concepts	3-5	*
CSC 230	Data Structures	5	CSC 265
CSC 250	Introduction to Assembly Language	3	*
CSC 265	The C Programming Language	3	*
CSC 278	C++ and Object-Oriented Programming	5	*
CSC 279	Java Programming	5	CSC 265

#### Option II: Programming in COBOL

CSC 130	Programming Fundamentals		*
or 131	Computer Science Concepts	3-5	*
CSC 160	COBOL Programming	3	*
CSC 260	Advanced COBOL Programming	5	CSC 160
CSC 280	Systems Analysis	3	*
CSC 289	Database Concepts	5	*

#### Option III: Programming in Visual Basic

CSC 106	Database Concepts	3	*
CSC 130	Programming Fundamentals		*
or 131	Computer Science Concepts	3-5	*
CSC 139	Introduction to Visual Basic	3	*
CSC 206	Database Procedural Language Programming	4	*
CSC 239	Programming in Visual Basic	3	CSC 139

### Suggested Course Sequence

See a computer science faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Small Computer Systems Administrator—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASCOMPSSYAD

This program is designed to prepare students for employment in the micro-computer field. Students are trained to be able to select, install and use most small computer systems (both hardware and software).

### Required Courses (74-78 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CSC 105	Survey of Microcomputer Uses	3	
CSC 106	Database Concepts I	3	*
CSC 109	Using the Windows Environment	3	CSC 105
CSC 119	Data Communications Fundamentals	3	CSC 109
CSC 130	Programming Fundamentals	3	*
CSC 136	Microcomputer Components	3	
CSC 187	Data Processing Projects I	1-3	
CSC 204	Advanced Spreadsheet Concepts	3	*
CSC 206	Database Procedural Language Programming	4	CSC 106
CSC 220	Novell Network Networking and Adm.	3	*
CSC 221	Windows NT Networking and Administration	5	*
CSC 238	Integrated Package Project	4	*
CSC 256	Microcomputer Software Applications	3	*
CSC 280	Systems Analysis	3	*
CSC 281	Systems Design	3	CSC 280

### Support Course

MAN 124	Small Business Management	3	*
Elective	Complete one of the following options:	6-8	

**Option 1:**

Complete one 100-level and one 200-Level course, or two 200-Level courses from within one of the following areas:

ACC, AJS, ANT, ARC, ASC, AST, BIO, BUS, CAD/DFT, CHM, ECN, ENG, MAN, MEC, MKT, MAT, NRS, PHY, SOC, SPA, WRT

**Option 2:**

Co-op Sequences: CSC 199, 299

**Option 3:**

Business Computing Sequence

Complete two of the nine following CSC courses: 139, 160, 175, 230, 239, 260, 265, 275, 289

**Option 4:**

Machine Language Sequence

Complete the following CSC courses: 250, 275

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking**

6

**Mathematics**

MAT 122

**Critical Thinking**

PHI 120

**Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

**Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

**Suggested Course Sequence**

See a computer science faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Computer Programmer/Analyst—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AACMPPRGANL

This program is designed to prepare students for direct employment as programmer/analysts, programmers, programmer trainees, computer sales staff and computer operators. Before taking CSC 130 or 135, students must take or test out of CSC 100. (See a faculty advisor or counselor for further details regarding this requirement.) Good study habits and strong logic and English skills are important for success in the program.

### Required Courses (71 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CSC 130	Programming Fundamentals		*
or 131	Computer Science Concepts	3-5	*
CSC 135	Introduction to Computer Operations	3	CSC 100
CSC 139	Introduction to Visual Basic		*
or 140	FORTTRAN Programming		*
or 160	COBOL Programming	3	*
CSC 187	Data Processing Projects I		*
or 287	Data Processing Projects II	1-3	*
CSC 220	Novell Network Networking and Adm.	3	*
CSC 250	Introduction to Assembly Language	3	*
CSC 260	Advanced COBOL/File Management		*
or 277	Advanced Programming in C		CSC 265
or 278	C++ and Object-Oriented Programming	5	*
CSC 265	The C Programming Language	3	*
CSC 275	Advanced 80x86 Assembly Language		CSC 250
CSC 280	Systems Analysis	3	*
CSC 281	Systems Design	3	CSC 280
CSC 289	Database Concepts	4-5	*

### ELECTIVES

12-14

Choose four courses from the following list. You must include at least two groupings, two classes from each of the following:

1. ACC 101, 102
2. Any CSC 199 or higher level course
3. ECN 201, 202
4. MAT 172 or higher
5. TEC 100 or higher course except TEC 160 and/or 255

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

6

SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

#### Analysis and Critical Thinking

6

#### **Mathematics**

MAT 122 or 151

#### **Critical Thinking**

PHI 120

#### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a computer science faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Computer Science—Associate of Science Degree for Transfer

Program Identification Code: AOSCOMPUTSCI

Students planning to transfer to the University of Arizona, Arizona State University, or Northern Arizona University must see an advisor or counselor for requirements unique to each school.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

This program is designed to meet the requirements for the first two years of a Bachelor's degree in Computer Science. Although it is not intended for direct employment, the Associate of Science degree provides a sufficient fundamental knowledge of mathematics, general education, and computer science to obtain entry-level positions by some employers.

### Required Courses (61-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CSC 131	Computer Science Concepts	5	*
CSC 230	Data Structures	5	CSC 265
CSC 240	Machine Architecture and Organization	3	CSC 250
CSC 250	Introduction to Assembly Language	3	*
CSC 265	The C Programming Language	3	*

### Support Courses

CHM 151	General Chemistry I		*
and 152	General Chemistry II		CHM 151
or			
PHY 210	Introductory Mechanics		*
and 216	Introduction to Electricity and Magnetism	10	*
MAT 220	Calculus I	5	*
MAT 231	Calculus II	4	MAT 220
MAT 227	Discrete Mathematics in Computer Science	3-4	MAT 151
		3	

### Elective

Complete one transferable course. This elective could include a prerequisite course for the core courses or general education courses.

### Arizona General Education Curriculum (AGEC-S) Requirements

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-S), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-S is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

<b>English Composition</b>	6
<b>Humanities and Fine Arts</b>	6
(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses that also fulfill the I, C, and G AGEC Special Requirements.)	
<b>Biological and Physical Sciences</b>	8
(The support courses, CHM 151/152 or PHY 210/216, fulfill this requirement. <u>This requirement is completed.</u> )	
<b>Mathematics</b>	3
(The support course, MAT 220, fulfills this requirement. <u>This requirement is completed.</u> )	
<b>Social and Behavioral Sciences</b>	6
(Select courses with two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)	
<b>Other Requirement Options</b>	6
(Support courses, MAT 231 and 237, fulfill this requirement. <u>This requirement is completed.</u> )	
<b>AGEC Special Requirements</b>	*
A student is required to fulfill each of the following AGEC Special Requirements:	
1. Intensive writing and critical inquiry (I)	
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)	
3. Global diversity (G)	

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a computer science faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Computer Science-Web Technologies—Certificate for Direct Employment

Program Identification Code: CRTWEBTECH

This program offers the skills needed for entry level World Wide Web programmer and web site administrator. Within the field of web site publishing it also enables experienced professionals to upgrade their programming skills and expand employment opportunities.

### Required Courses (26 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CSC 110	Introduction to the Internet for New Computer Users	1	*
CSC 119	Data Communications Fundamentals	3	CSC 109
CSC 121	WWW Publishing and Support	3	*
CSC 137	Intro to the UNIX Operating System	3	*
CSC 266	CGI Programming with PERL	3	*
CSC 272	Advanced Network Concepts	4	*
CSC 273	Advanced Web Page Development	4	*
CSC 279	Java Programming	5	CSC 265

### Suggested Course Sequence

See a computer science faculty advisor.

\*For additional prerequisite information, check course section.



# Construction

This program is designed to meet the requirements for the first two years of a Bachelor of Science degree in Construction.

This program is currently intended to transfer to Arizona State University, Northern Arizona University, and Western New Mexico University. Students wishing to transfer to the University of Arizona, or a different institution should see a Pima College faculty advisor or counselor.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

For additional construction related programs, see Computer Aided Drafting Technology program and Building and Construction Technologies program in this catalog.

## Construction—Associate of Arts Degree for Transfer

Program Identification Code: AOACONSTRUCT

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading requirement** - Please refer to the Reading requirement in the General Education section before enrolling in a general education course.

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

BCT 201	Cost Estimating	3	*
CAD 206	Commercial Design and Drafting II	4	CAD 156
ENG 102**	Problem-solving/ Engineering Design	3	*
ENG 130	Elementary Surveying	3	*
ENG 170**	Problem-solving Using Computers	3	ENG 102

### Support Courses

ACC 101	Financial Accounting	3	
ECN 201	Microeconomic Principles	3	MAT 092
ECN 202	Macroeconomic Principles	3	MAT 092
MAT 167	Introductory Statistics	3	*
MAT 220	Calculus I	5	*
PHY 121	Introductory Physics I	5	*
PHY 122	Introductory Physics II	5	PHY 121
SPE 110	Public Speaking	3	

## Elective

3

Complete one transferable course. The elective could be a prerequisite course for the major or general education.

## Arizona General Education Curriculum

### (AGEC-A) Requirements

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECA, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

## English Composition

6

## Humanities and Fine Arts

6

(Complete courses from the ART LIST and the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from these lists that also fulfill the I, C, and G AGECA Special Requirements.)

## Biological and Physical Sciences

8

(PHY 121 and 122 fulfill this requirement. [This requirement is completed.](#))

## Mathematics

3

(MAT 220 fulfills this requirement. [This requirement is completed.](#))

## Social and Behavioral Sciences

6

(ECN 201 fulfills this requirement. Complete one additional non-ECN course from this list.)

## Other Requirement Options

6

(MAT 167 and SPE 110 fulfill this requirement. [This requirement is completed.](#))

### AGEC Special Requirements

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence (Read down.)

WRT 101	ECN 201	MAT 167
PHY 121	MAT 220	Elective
ACC 101	ENG 170	CAD 206
WRT 102	SPE 110	Humanities and Fine
ENG 102	ECN 202	Arts elective
ENG 130	BCT 201	ENG 210
PHY 122	Elective	Elective

See a construction faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\*For ENG 102 AND 170, see a faculty advisor or counselor.

## Court Reporting

The Court Reporting Program prepares graduates with the skills required for careers in the court reporting and real time captioning fields. This program provides the competence, knowledge, and background for movement into employment by court systems or as a freelance reporter. Students who achieve a high skill level possess the computerized reporting skills to convert spoken words into written words almost instantly. This capability is called real time writing and provides potential for employment in both the private and public sector. Real time writers help provide access for persons

with hearing problems to court sessions, social events, business and civic meetings, educational opportunities, and other events. Real time is also used to produce captions of live television and entertainment program such as local and network news programs, talk shows, and sports events. Program completers qualify for careers in court reporting, steno transcribing, captioning, court reporter support, computer assisted real time and as a courtroom clerk.

### Court Reporting-Court Clerk Option—Certificate for Direct Employment

Program Identification Code: CRTCTREPLK

### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CRT 101	Theory of Machine Shorthand I	3	
CRT 102	Theory of Machine Shorthand II	3	CRT 101
CRT 110	Skill Building and Development	3	CRT 102
CRT 120	Computer-Aided Transcription	3	CRT 110

### Support Courses

AJS 101	Introduction to Administration of Justice Systems	3	
CSC 105	Survey of Microcomputer Uses	3	
CSS 101	Survey of Court Systems I	3	
RIM 132	Records Management: Filing Systems	3	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

**Analysis and Critical Thinking** 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

**Mathematics**

MAT 100 level or higher (except MAT 198)

**Science**

Any AGECE categorical requirement from the Biological/Physical Science list.

**Critical Thinking**

PHI 120

**Suggested Course Sequence**

See a faculty advisor or counselor.

## Court Reporting—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASCRTSUPSRV

**Required Courses (60 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CRT 101	Theory of Machine Shorthand I	3	
CRT 102	Theory of Machine Shorthand II	3	CRT 101
CRT 110	Skill Building and Development	3	CRT 102
CRT 120	Computer Aided Transcription	3	CRT 110
CRT 130	Beginning Speed Building	3	CRT 120
CRT 140	Intermediate Speed Building	3	CRT 130
CRT 150	Advanced Speed Building	3	CRT 140

**Support Courses**

AJS 101	Intro to Admin of Justice Systems	3
ASC 111	Computer Keyboarding and Document Production	3

ASC 112	Advanced Computer Keyboarding: Document Production	3	ASC 111
ASC 141	Legal Terms	3	
CSC 105	Survey of Microcomputer Uses	3	
CSS 101	Survey of Court Systems I	3	
RIM 132	Records Management Filing Systems	3	

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

ASC 151 and 251  
MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking** 6**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

Any AGECE categorical requirement from the Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECECategorical requirement from the Art list

Any AGECECategorical requirement from the Humanities/Historical Perspective list

Any AGECECategorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECECategorical requirement from the Social/Behavioral Sciences list

Any AGECECategorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Court Support Services

Desert Vista Campus offers a program leading to a Certificate for Direct Employment and an Associate of Applied Science Degree for Direct Employment in Court Support Services. Completion of the program prepares the student for employment in important support areas of the court system.

The Court Support Services Program offers a combination of classroom and field experiences preparing students for careers in the court support areas. The court support field includes, but is not limited to, areas of: docketing, calendaring, scheduling, court security, budget support, office support, jury management, and procedure specialists.

### Court Support Services—Certificate for Direct Employment

Program Identification Code: CRTCRSUSPSRV

This program is designed to provide basic skills in court support services. Field experience is required.

#### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
AJS 101	Intro to Admin of Justice Systems	3	
CSC 105	Survey of Microcomputer Uses	3	
CSS 101	Survey of Court Systems I	3	
CSS 290	Court Support Services Field Experiences	3	CSS 101
RIM 132	Records Management: Filing Systems	3	
<b>Electives</b>		9	

See a court support services advisor or counselor.

#### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

**Analysis and Critical Thinking**

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

**Mathematics**

MAT 100 level or higher (except MAT 198)

**Science**

Any AGECE categorical requirement from the Biological/Physical Science list.

**Critical Thinking**

PHI 120

**Suggested Course Sequence**

See an advisor or counselor.

\*For additional prerequisite information, check course section.

**Court Support Services—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASCRTSUSPSRV

**Required Courses (60 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

AJS 101	Intro to Admin of Justice Systems	3	
CSC 105	Survey of Microcomputer Uses	3	
CSS 101	Survey of Court Systems I	3	
CSS 201	Survey of Court Systems II	3	CSS 101
CSS 210	Judicial System Communications	3	
CSS 290	Court Support Services Field Experiences	3	CSS 101
RIM 132	Records Management: Filing Systems	3	

**Electives**

21

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

6

ASC 151 and 251  
MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking**

6

**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

Any AGECE categorical requirement from the Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

**Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

Any AGECECategorical requirement from the Social/Behavioral Sciences list

Any AGECECategorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See an advisor or counselor.

\*For additional prerequisite information, check course section.

## **Court Support Services—Tribal Court Advocacy—Certificate for Direct Employment**

The Tribal Court Advocate Option is designed to prepare students for careers in the tribal courts. The program of study will include a thorough synopsis of the roles and purposes of Tribal Courts, and the role of advocates in these courts. The curriculum focuses on the presentation of legal principles and the application of these principles in a tribal court setting. The program of study will provide students with knowledge of the major structures and organization of the American judicial system, including an emphasis on the Tribal Courts in Arizona as well as the rest of the nation. The curriculum will also cover the role and function of Tribal Court jurisdictions and the basic role and functions of advocates in the Tribal Courts. The curriculum concentrates on the teaching of legal concepts and the application of these concepts in the tribal court setting. Students will be prepared to provide paraprofessional support in the form of legal research, preparation of legal documents and advocacy.

Program Identification Code: CRTTRBCRTADV

## **Required Courses (30 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CSS 101	Survey of Court Systems I	3	
CSS 116	Introduction to the Tribal Courts	3	
CSS 120	Introduction to Tribal Court Advocacy	3	
CSS 220	Issues in Tribal Court Advocacy	3	
CSS 290	Court Support Services Field Experiences (Tribal Court Placement)	3	*

### **Support Courses**

AJS 101	Introduction to Administration of Justice Systems	3	
CSC 105	Survey of Microcomputer Uses	3	
RIM 132	Records Management: Filing Systems	3	

### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### **Communication**

3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

### **Analysis and Critical Thinking**

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### **Mathematics**

MAT 100 level or higher (except MAT 198)  
TEC 113

### **Science**

MAC 275  
Any AGECECategorical requirement from the Biological/Physical Science list.



## Critical Thinking

PHI 120

### Suggested Course Sequence

See an advisor or counselor.

\*For additional prerequisite information, check course section.

# Dental Assisting Education

The Dental Assisting Education program provides theoretical and practical preparation for its program graduates. Graduates of the Dental Assisting Education program may seek immediate employment as qualified dental assistants in hospitals, clinics, and dental offices.

The total program may be completed within two semesters. A minimum of 336 hours of clinical procedures in affiliated dental clinics and/or private dental offices will be completed during the second semester of study. Students who complete this program will graduate with a certificate for direct employment from Pima Community College and will be eligible to take the national certification examination and state oral radiography licensure examination.

Admission to the Dental Assisting Education program requires a separate application procedure.

Students are encouraged to meet with an advisor or counselor.

Students seeking admission to the Dental Assisting Education program must be in the process of completing the following basic requirements before receiving an application:

- High School diploma or GED
- Admission to Pima Community College
- Completion of the Math and Reading assessment test
- One semester of high school or college biology or zoology

### General Requirements:

- Total required credits: 38 credit hours
- DAE course work: 29 credit hours
- Other course work including General Education courses: 9 credit hours

### Restrictions:

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program department chairperson.

### Minimal Grade Achievement:

- Students must receive a "C" grade or better in all core courses to progress to the next semester.

## Dental Assisting Education—Certificate For Direct Employment

Students in this program should enroll in a special section of HCA 154. This course should be taken during the first semester of the program.

### Required Courses (38 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
DAE 160	Orientation to Dental Care	1	*
DAE 161	Biomedical Dental Science	3	*
DAE 162	Dental Assisting I	3	*
DAE 163	Oral Radiography	3	*
DAE 164	Dental Materials	3	*
DAE 165	Pre-Clinical Procedures	2	*
DAE 166	Dental Assisting II	3	*
DAE 167	Dental Assisting III	3	*
DAE 190	Clinical Procedures	8	*
HCA 154	Introduction to Health Care	3	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

## Science

Any AGEC categorical requirement from the Biological/Physical Science list.

## Critical Thinking

PHI 120

## Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Dental Hygiene

This curriculum provides the theoretical and practical preparation to qualify graduates for positions in general and specialty dental offices, hospitals, schools, and public health agencies. The program consists of four semesters on campus with one summer session. The program is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council of Post-secondary Accreditation and the United States Department of Education. Graduates of the Dental Hygiene program will receive an Associate of Applied Science degree and will be eligible for licensure in Arizona and other jurisdictions.

Admission to the Dental Hygiene program requires a separate application procedure.

Students are encouraged to meet with an advisor or counselor.

Students seeking admission to the Dental Hygiene program must have either completed or be currently enrolled during the Fall semester in the following basic requirements before receiving an application:

## Program Prerequisites

- High School diploma or GED
- Admission to Pima Community College
- Reading assessment test score at the level of, or completion of REA 112
- Math assessment test at the level of MAT 151 or higher, or completion of MAT 122
- BIO 201 within the last 8 years
- BIO 202 within the last 8 years
- BIO 205 within the last 8 years
- CHM 140 within the last 8 years

## General Requirements

- Total required credits: 70 credit hours
- DHE course work: 46 credit hours
- Other course work including General Education courses: 24 credit hours

## Restrictions

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program department chairperson.

## Minimal Grade Achievement

- Students must receive a "C" grade or better in all core courses to progress to the next semester.

## Dental Hygiene—Associate of Applied Science Degree for Direct Employment

### Required Courses (70 Credit Hours) plus prerequisites

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

### Reading Requirement - (Satisfied by program prerequisites.)

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

DHE 101	Pre-Clinical Dental Hygiene	4	*
DHE 104	Dental And Oral Morphology	1	*
DHE 107	Oral Embryology And Histology	2	*
DHE 116	Oral Radiography	3	*
DHE 119	Periodontology	1	*
DHE 120	Oral Pathology	2	*
DHE 121	Nutrition and Preventive Dentistry	3	*
DHE 190	Clinical Dental Hygiene I	4	*
DHE 191	Clinical Dental Hygiene II	3	*
DHE 204	Dental Materials	3	*
DHE 207	Pharmacology	3	*
DHE 208	Pain and Anxiety Control for Dental Hygiene	1	*
DHE 209	Computers And Practice Management	2	*
DHE 213	Advanced Periodontal Services	2	*
DHE 216	Community and Dental Hlth Education	3	*
DHE 290	Clinical Dental Hygiene III	5	*
DHE 291	Clinical Dental Hygiene IV	4	*

## Support Courses

PSY 100A	Psychology I	3
SPE 102	Introduction to Oral Communication	3

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6  
WRT 101 and 102

**Analysis and Critical Thinking** 6

### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

Prerequisite requirement: math assessment at the level or MAT 151 or completion of MAT 122.

### Science

Prerequisite courses fulfill this requirement. (BIO 201, 202, 205, CHM 140)

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECECategorical requirements lists.

### Humanities and Fine Arts

Any AGECECategorical requirement from the Art list

Any AGECECategorical requirement from the Humanities/Historical Perspective list

Any AGECECategorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

SOC 101

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a dental hygiene faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Dental Laboratory Technology

The total program is made up of four semesters of classes. It includes 1,492 clock hours of laboratory practice. Graduates will receive an Associate of Applied Science degree with a major in dental laboratory technology. Graduates of the Dental Laboratory Technology program qualify to take the National Board for Certification in Dental Laboratory Technology's Recognized Graduate Exam. After two years of practical work experience, the recognized graduate can qualify to take the Certified Dental Technician practical exam given by the National Board for Certification in Dental Laboratory Technology.

Admission to the Dental Laboratory Technology program requires a separate application procedure.

Students are encouraged to meet with an advisor or counselor.

Students seeking admission to the Dental Laboratory Technology program must be in the process of completing the following basic requirements before receiving an application:

- High School diploma or GED
- Admission to Pima Community College
- Completion of the Math and Reading assessment tests
- Completion and evaluation of GATB (General Aptitude Test - Battery)

### General Requirements

- Total required credits: 70 credit hours
- DLT course work: 47 credit hours
- Other course work including General Education courses: 23 credit hours

### Restrictions

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program coordinator.
- Applicants must demonstrate reading competency at the level of REA 112 (12 grade level) or higher to qualify for graduation from the DLT program.

**Minimal Grade Achievement**

- Students must receive a "C" grade or better in all core courses to progress to the next semester.

## Dental Laboratory Technology—Associate of Applied Science Degree for Direct Employment

**Required Courses (70 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

DLT 101	Dental Morphology	3	*
DLT 102	Nonmetallic Dental Materials	3	*
DLT 103	Complete Dentures	4	*
DLT 104	Dental Laboratory I	4	*
DLT 105	Partial Denture Construction	4	*
DLT 106	Orthodontics and Maxillofacial Construction	3	*
DLT 108	Laboratory Management	3	*
DLT 201	Dental Laboratory II	3	*
DLT 202	Dental Metallurgy I	3	*
DLT 203	Fixed Bridgework	4	*
DLT 204	Dental Laboratory III	3	*
DLT 206	Dental Ceramics	4	*
DLT 207	Advanced Dental Laboratory Technology	6	*

**Support Courses**

MAN 124	Small Business Management	3
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**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

6

WRT 101 and 102

**Analysis and Critical Thinking**

6

**Science**

CHM 130, PHY 101

**Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

**Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

MAN 110

**Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

**Suggested Course Sequence**

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Design

Pima Community College offers an Associate of Applied Arts in design with a specialty in either Fashion Design or Interior Design.

The fashion design curriculum provides the student with an educational and practical background in the clothing design profession including its many occupational specialties. Students completing the fashion design option under Design will be able to design and illustrate apparel and/or costumes, draft patterns, specify fabrics and notions, and sew garments as samples or for individual clients. Courses apply to merchandising clothing in terms of understanding quality, price, trends, supply and demand, and production.

The interior design curriculum provides the student with a knowledge of the profession including basic design, color theory, history of architecture and furniture, interior materials, business procedures, drafting, and presentation techniques. Studio projects allow the student to identify, research, and solve both residential and contract design issues.

## Design—Associate of Applied Arts Degree for Direct Employment

Program Identification Code: AAADSIGN

### Required Courses (60 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

DES 100	Introduction to Design	3
DES 111	Fundamentals of Design	3
DES 122	Graphic Communication I	3
DES 152	Color and Lighting Theory	3
FDC 126	Textiles	3
MKT 111	Marketing	
or DES 110	Marketing	3

### Support Courses

Complete either Option A or Option B.

#### OPTION A - Fashion Design

FDC 111	Clothing Construction (Beginning) I	3
FDC 121	Applied Dress Design	3
FDC 122	History of Fashion	3

FDC 131	Clothing Selection		
or 132	Psychology of Dress	3	
FDC 141	Fashion Design I	3	
FDC 211	Clothing Construction (Advanced) II	3	*
FDC 241	Fashion Design II	3	
Elective	See a faculty advisor before choosing an elective.	3	

#### OPTION B - Interior Design

DES 151	Structural Concepts	3	
DES 155	Space Planning I	3	
DES 212	History of Design	3	
DES 220	Interior Methods and Materials	3	
DES 222	Graphic Communication II	3	DES 122
DES 230	Business/Professional Practices	3	
DES 255	Space Planning II	3	DES 155
DES 256	Human/Environmental Factors	3	DES 122

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 6

ASC 151 and 251  
MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking 6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

## Science

Any AGEC categorical requirement from the Biological/Physical Science List

## Critical Thinking

PHI 120

## Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

## Humanities and Fine Arts

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

## Social and Behavioral Sciences

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

## Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

## Suggested Course Sequence

See a design faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Early Childhood Education

The Early Childhood Education program offers the following direct employment certificates and degrees:

- Teacher Aide/Assistant Certificate
- Teacher/Director Associate of Applied Science Degree for Direct Employment
- Basic School-Age Child Care Certificate, Advanced School-Aged Child Care Certificate, and Associate of Applied Science Degree for Direct Employment

The program may also be arranged for transfer to either Arizona or out-of-state universities in the following areas: child development and family relations, elementary education, secondary education, special education and early childhood education. Student should first consult the catalog of the institution to which they plan to transfer to determine requirements for the first two years. They should arrange their transfer program with an advisor or counselor, using this catalog information. (See Education section.)

## Teacher Aide/Assistant Certificate For Direct Employment

Program Identification Code: CRTTEACHAIDE

### Required Courses (36 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ECE 106	The Growing Years		
or 117	Child Growth and Development	3	*
ECE 108	Literature/Social Studies for Children	3	
ECE 110	Communication and Language: Early Literacy for Children	3	
ECE 112	Music/Art for Children	3	
ECE 118	Introduction to Education	3	*
ECE 124	Math/Science for Children	3	MAT 082
ECE 126	Teaching Techniques	3	*
ECE 128	Preschool Education	3	
ECE 199	Co-op Related Class in ECE	1	*
ECE 199	Co-op Work in ECE	2	*



**Support Course**

WRT 100 Writing Fundamentals 3 \*

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

**Analysis and Critical Thinking** 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

**Mathematics**

MAT 100 level or higher (except MAT 198)  
TEC 113

**Science**

MAC 275  
Any AGECE categorical requirement from the Biological/Physical Science list.

**Critical Thinking**

PHI 120

**Suggested Course Sequence**

See an early childhood education faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Teacher/Director—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASTEACHDRCT

**Required Courses (66 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ECE 106	The Growing Years		
or 117	Child Growth and Development	3	*
ECE 107	Human Development and Relations	3	*
ECE 108	Literature/Social Studies for Children	3	
ECE 110	Communication and Language:		
	Early Literacy for Children	3	
ECE 111	Special Education for Children	3	*
ECE 112	Music/Art for Children	3	
ECE 114	Effective Parenthood	3	
ECE 118	Introduction to Education	3	*
ECE 120	Supervision and Administration of		
	Early Childhood Programs	3	*
ECE 124	Math/Science for Children	3	MAT 082
ECE 126	Teaching Techniques	3	*
ECE 128	Preschool Education	3	
ECE 130	Day Care Programs	3	
ECE 199	Co-op Related Class in ECE	1	*
ECE 199	Co-op Work in ECE	2	*
ECE 299	Co-op Related Class in ECE	1	*
ECE 299	Co-op Work in ECE	2	*

**Support Course**

FSN 124 Nutrition for the Young Child 3

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

WRT 101 and 102

## **Analysis and Critical Thinking**

6

### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

### **Science**

Any AGEC categorical requirement from the Biological/Physical Science List

### **Critical Thinking**

PHI 120

## **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

### **Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

## **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

## **Suggested Course Sequence**

See an early childhood education faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **School-Age Child Care Worker**

The Pima Community College Early Childhood Education program offers a series of highly practical courses that may lead to direct employment in the growing field of school-age child care.

The school-age child care educational experience is articulated through a four semester system which offers degree certification through a basic certificate for Program Assistant in School-Age Child Care following successful completion of two semesters of study.

## **Basic School-Age Child Care Assistant Certificate for Direct Employment**

Program Identification Code: CRTCHILDCR-B

### **Required Courses (18 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ECE 106	The Growing Years		
or 117	Child Growth and Development	3	*
ECE 126	Teaching Techniques	3	*
ECE 130	School-Age Child Care and Program Development	3	
ECE 199	Co-op Related Class in ECE	1	*
ECE 199	Co-op Work in ECE	2	*
EDU 108	Music, Art, and Drama for School-Aged Child Care	3	
FSS 242	Games and Activities for the School-Aged Child	3	

### **Suggested Course Sequence**

See an early childhood faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Advanced School-Age Child Care Certificate for Direct Employment

Program Identification Code: CRTCHILDCR-A

### Required Courses (36 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ECE 106	The Growing Years	3	*
or 117	Child Growth and Development	3	*
ECE 111	Special Education for Children	3	*
ECE 126	Teaching Techniques	3	*
ECE 130	School-Age Child Care and Program Development	3	
ECE 199	Co-op Related Class in ECE	1	*
ECE 199	Co-op Work in ECE	2	*
ECE 299	Co-op Related Class in ECE	1	*
ECE 299	Co-op Work in ECE	2	*
EDU 108	Music, Art, and Drama for School-Aged Child Care	3	
EDU 109	Language Arts, Science, and Math for School-Age Child Care	3	
FSS 242	Games and Activities for the School-Aged Child	3	

### Support Course

SPE 102	Introduction to Oral Communication	3	
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	3
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WRT 101

<b>Analysis and Critical Thinking</b>	3
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Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See an early childhood faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## School-Age Child Care—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASCHILDCARE

This program is designed for direct employment in the field of child care. However, most required general education and support courses will transfer to Arizona State University, Northern Arizona University, or the University of Arizona. Depending upon the transfer institution chosen, some core courses may also transfer. It is important for the student to see an academic advisor or counselor concerning the transferability of these courses to the institution of his/her choice.

### Required Courses (62 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ECE 106	The Growing Years		
or 117	Child Growth and Development	3	REA 112*
ECE 111	Special Education for Children	3	WRT 100*
ECE 120	Supervision and Administration of Early Childhood Programs	3	MAT 082*
ECE 126	Teaching Techniques	3	WRT 100*
ECE 130	School-Aged Child Care and Program Development	3	
ECE 199	Co-op Related Class in ECE	1	*
ECE 199	Co-op Work in ECE	2	*

ECE 299	Co-op Related Class in ECE	1	ECE 199*
ECE 299	Co-op Work in ECE	2	ECE 199*
EDU 108	Music, Art, and Drama for School-Age Child Care	3	
EDU 109	Language Arts, Science, and Math for School-Age Child Care	3	
FSS 242	Games and Activities for the School-Aged Child	3	

### Support Courses

SPE 102	Introduction to Oral Communications	3
SSE 146	Child Abuse Intervention/Protection	3

Science Electives 8

Select any AGECE categorical requirement from the biological and physical sciences list

### General Education Courses

**Communication** 6

WRT 101 and 102

**Analysis and Critical Thinking** 6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 142 or 151

Support courses satisfy the remainder of this requirement

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

#### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Computer Literacy 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See an early childhood faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Education

Program Identification Codes:

- Elementary Education: AOALIBRALART
- Secondary Education: AOALIBRALART
- Special Education and Rehabilitation: AOALIBRALART

Students interested in pursuing teaching as a career, either at the elementary or secondary level, should follow the Associate of Arts Degree for Transfer in Liberal Arts in this catalog.

Students should be aware that education is an upper-level major in Arizona's three state universities and admission may be dependent on a number of factors, including mandated pre-professional tests, grade point average, and pre-professional experience. It is therefore recommended that students contemplating a teaching career study the catalog and contact an advisor or counselor at the college/university you plan to transfer to for information regarding admission requirements.

Pima Community College provides courses in the Early Childhood Education department that are designed to introduce prospective elementary and secondary teachers to the education field and provide them with field experiences. Consult an ECE faculty advisor or counselor for a list of these courses. Students interested in secondary teaching should consult Pima Community College faculty advisors or counselors in their prospective major and minor teaching content areas.

# Emergency Medical Technology

(See Public Safety and Emergency Services Institute)

## Engineering

### Engineering—Associate of Science Degree for Transfer

Program Identification Code: AOSENGINEERG

Verification of transfer courses must be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section. The Engineering program, courses, and advisors or counselors are available on the West Campus.

This program is designed to prepare the student to transfer to a four-year institution to complete a four-year engineering program. Although it is not intended for direct employment, the Associate of Science degree is recognized by some employers when considering employees for advancement or applicants for entry-level technical positions. The Associate of Science degree provides a solid foundation in mathematics and physical science with some beginning applications in the analysis and design of engineering systems. The student is directed, with the guidance of an advisor or counselor, toward a specific engineering discipline (i.e., electrical, computer, aerospace, mechanical, civil, etc.) through the selection of technical electives.

The engineering program presumes an aptitude for mathematical analysis and a strong high school background in pre-calculus mathematics and physics. Students with deficiencies in these areas should take appropriate prerequisite courses prior to beginning the engineering program. Since most of the courses in the program must be taken sequentially, it is important for the student to maintain contact with an advisor or counselor to assure a logical progression and to keep abreast of frequent program modifications resulting from technological developments.

#### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CHM 151	General Chemistry I	5	*
CHM 152	General Chemistry II	5	CHM 151
ENG 102	Problem-Solving and Engineering Design	3	*
ENG 170	Problem-Solving Using Computers	3	ENG 102
MAT 220	Calculus I	5	*
MAT 231	Calculus II	4	MAT 220
MAT 241	Calculus III	4	MAT 231
MAT 262	Differential Equations	3	MAT 241
PHY 210	Introductory Mechanics	5	*
PHY 216	Introductory Electricity and Magnetism	5	*

#### Arizona General Education Curriculum

##### (AGEC-S) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree course list.)

By completing the general education portion of this degree (AGEC-S), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECS is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECS, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECS is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECS categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

#### English Composition 6

#### Humanities and Fine Arts 6

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGECS Special Requirements.)

#### Biological and Physical Sciences 8

(Core courses, CHM 151 and 152, fulfill this requirement. This requirement is completed.)

#### Mathematics 3

(Core course, MAT 220, fulfills this requirement. This requirement is completed.)

## Social and Behavioral Sciences

6

(Select courses with at least two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)

## Other Requirement Options

6

(Core courses, MAT 231 and 241, fulfill this requirement. This requirement is completed.)

## AGEC Special Requirements

\*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

## Suggested Course Sequence

See an engineering faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# English and Creative Writing

Program Identification Code: AOALIBRALART

A student planning on obtaining a degree with an option in English or Creative Writing should follow the Associate of Arts Degree for Transfer in Liberal Arts.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

# Environmental Technology

Environmental Technology is a rapidly expanding occupational field throughout the United States. Increasing populations, combined with more stringent state and federal environmental regulations, have created a rapidly growing need for trained environmental technicians. The Environmental Technology program includes both certificate and degree sequences designed to provide students with the necessary training to successfully compete in this growing field. Training opportunities in the program are being continually expanded as new environmental technology needs emerge. Cooperative education experiences are available to enhance student learning and later employability.

The certificate and degree programs listed below are offered through the academic Environmental Technology program on a credit basis. Those students interested in taking courses on a non-credit basis should contact the Arizona State Environmental Technology Training (ASETT) Center. The Center, which is the U.S. Environmental Protection Agency's designated state wastewater training center located on the East Campus, offers statewide education and training programs in all facets of Environmental Technology.

Students interested in transferring to a four-year institution should check with a Pima Community College counselor or advisor or with the transfer college or university for other pre-baccalaureate Environmental Technology programs.

## Environmental Technology—Environmental Laboratory Analysis Certificate for Direct Employment

Program Identification Code: CRTLABANALYS

### Required Courses (36 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ENV 100	Intro to Environmental Technology	4	*
BIO 105	Environmental Biology	4	
CHM 140	Fundamentals of Organic and Biochemistry	5	*
ENV 202	Environmental Sampling and Monitoring	3	ENV 100
ENV 208	Environmental Laboratory Analysis	3	*
ENV 258	Advanced Laboratory Analysis	3	ENV 208



### Support Courses

CHM 130	Fundamentals of Chemistry	5
MAN 110	Human Relations in Business and Industry	3

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication 3

WRT 101

#### Analysis and Critical Thinking 3

#### Mathematics

MAT 122 or higher

### Suggested Course Sequence

See an environmental technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Environmental Technology—Hazardous Materials Management Certificate for Direct Employment

Program Identification Code: CRTHAZMATMGT

### Required Courses (31 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ENV 100	Intro to Environmental Technology	4	*
ENV 150	Intro to Hazardous Materials and EPA Compliance	3	*
ENV 153	Chemistry of Hazardous Materials	3	*
ENV 155	Site Investigation I	3	*
ENV 156	Hazard Communication and Department of Transportation Hazardous Materials	4	*
ENV 195	Pollution Management Proficiency	2	*

ENV 251	OSHA 40: Hazardous Materials-Health and Safety	3	*
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### Support Courses

MAN 110	Human Relations in Business and Industry	3
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication 3

WRT 101

#### Analysis and Critical Thinking 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course list.

#### Mathematics

MAT 100 level or higher (except MAT 198)

This requirement may be met by course work or by assessment of competency at the 100 level or higher.

### Suggested Course Sequence

See an environmental technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Environmental Technology—Water and Wastewater Systems Technology Certificate for Direct Employment

Program Identification Code: CRTWATERSYST

### Required Courses (33 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ENV 100	Introduction to Environmental Technology	4	*
ENV 102	Hydraulics	4	*

ENV 106	Chemistry of Water/Wastewater Treatment	3	*
ENV 130	Introduction to Water/Wastewater Treatment	4	*
ENV 132	Water and Wastewater Conveyance Systems	4	*
ENV 172	Water and Wastewater Operator Proficiency	2	*
ENV 200	OSHA 30: Industrial/Workplace Safety	3	*

### Support Courses

MAN 110	Human Relations in Business and Industry	3	
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	3
WRT 101	

<b>Analysis and Critical Thinking</b>	3
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Choose 3 credit hours from the mathematics, or science, or critical thinking course list.

### Mathematics

MAT 100 level or higher (except MAT 198)

### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list

### Critical Thinking

PHI 120

### Suggested Course Sequence

See an environmental technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

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

Program Identification Code: AASENVIRTECH

### Required Courses (70-72 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
Certificate requirements		31-36	

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

After completion of the certificate course work, select 24-27 additional credits from the following. Students must consult with an ENV advisor or counselor to customize second year course work, which should include upper division course work in the area of the completed certificate, OR a second certificate OR a combination of ENV and elective courses. A minimum of 9 upper division (200 level) credits are required, including the certificate course work.

ENV 102	Hydraulics	4	*
ENV 106	Chemistry of Water/Wastewater Treatment	3	*
ENV 130	Intro to Water/Wastewater Treatment	4	*
ENV 132	Water and Wastewater Conveyance Systems	4	*
ENV 150	Introduction to Hazardous Materials and EPA Compliance	3	*
ENV 153	Chemistry of Hazardous Materials	3	*
ENV 155	Site Investigation I	3	*
ENV 156	Hazard Communication and Dept. of Trans. Hazardous Materials	4	*
ENV 172	Water and Wastewater Operator Proficiency	2	*
ENV 175	Pollution Management Proficiency	2	*
ENV 200	OSHA 30: Industrial/Workplace Safety	3	*
ENV 202	Environmental Sampling and Monitoring	3	ENV 100
ENV 205	Environmental Law for Non-Lawyers	3	*
ENV 206	Air Monitoring and Sampling	3	*
ENV 208	Environmental Laboratory Analysis	3	*
ENV 220	Advanced Wastewater Treatment	3	ENV 130
ENV 240	Advanced Water Treatment	3	ENV 130
ENV 242	Cross-Connection Control	3	
ENV 244	Electrical and Mechanical Maintenance	3	
ENV 250	Toxicology and Industrial Hygiene	3	*
ENV 251	OSHA 40: Hazardous Materials-Health and Safety	3	*
ENV 298	Advanced Topics in ENV:	1-3	*

ENV 299	Co-op Related Class in ENV	1	*
ENV 299	Co-op Work in ENV	1-5	*

**Optional utilization of the following course work, up to a limit of 12 credits, as core course-electives for graduation requires consultation with an ENV advisor or counselor.**

BIO 105	Environmental Biology	4	
CHM 151	General Chemistry I	5	*
CHM 152	General Chemistry II	5	CHM 151
CSC 100	Introduction to Computers and Information Systems	3	*
CSC 105	Survey of Microcomputer Uses	3	
CSC 108	Microcomputer Operating Systems	3	
DFT 100	Print Read/Sketch for Manufacturing	4	
EMT 100	Basic Emergency Medical Technology	9	*
FSC 167	Rescue Practices and First Aid	3	
HED 140B	Cardiopulmonary Resuscitation (CPR)	.5	
MAC 110	Machine Shop I	4	
PHY 101	Technical Physics I	3	*
PHY 102	Technical Physics II	3	*
PHY 121	Introductory Physics I	5	*
PHY 122	Introductory Physics II	5	PHY 121

#### **Support Courses**

MAN 122	Supervision	
or 124	Small Business Management	3

#### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### **Communication** 6

WRT 101 and 102 or WRT 107 and 108

#### **Analysis and Critical Thinking** 6

##### **Mathematics**

(This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the analysis and critical thinking category.)

MAT 100 level or higher (except MAT 198)  
TEC 113

#### **Science**

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List

#### **Critical Thinking**

PHI 120

#### **Global Awareness** 6

(This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.)

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### **Leadership and Ethics**

HDE 170

(Any course in this category meets the cultural diversity requirement.)

#### **Computer Literacy** 0-3

(This requirement may be met by either course work or by competency attained through or determined by the program.)

CSA 173, 174, 175

#### **Suggested Course Sequence**

See an environmental technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Environmental Science—Associate of Arts Degree for Transfer

Program Identification Code: AOAENVIROSCI

Students planning to transfer to the Arizona State University, or Northern Arizona University should see an advisor or counselor for requirements unique to each school. Please note that 72 credits may be transferred to the University of Arizona and only 64 credits may be transferred to Arizona State University and Northern Arizona University.

### Required Courses (62-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CHM 235	General Organic Chemistry	5	CHM 152
ENV 100	Intro to Environmental Technology	4	*
ENV 105	Humanity and the Environment	3	
ENV 202	Environmental Sampling and Monitoring	3	ENV 100
ENV 208	Environmental Laboratory Analysis	3	*
ENV 258	Advanced Laboratory Analysis	3	ENV 208

### Support Courses

BIO 181	General Biology	4	*
BIO 205	Microbiology	4	*
CHM 151	General Chemistry I	5	*
CHM 152	General Chemistry II	5	CHM 151
ECN 201	Microeconomic Principles	3	MAT 092
MAT 167	Introductory Statistics	3	MAT 151
MAT 187	Precalculus	5	*

### Arizona General Education Curriculum (AGEC-A) Requirements

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGEC-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGEC, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 6

(ENV 105 fulfills 3 credits of this requirement. Select one additional course from the ART LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

(Support courses, BIO 181 and 205, fulfill this requirement. This requirement is completed.)

**Mathematics** 3

(MAT 187 fulfills this requirement. This requirement is completed.)

**Social and Behavioral Sciences** 6

(ECN 201 fulfills this requirement. Complete one additional non-ECN course from this list. It is best to select a course that fulfills an I, C, or G AGEC Special Requirement.)

**Other Requirement Options** 6

(CHM 151 and 152 fulfill this requirement. This requirement is completed.)

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the

categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### **Suggested Course Sequence**

See an environmental technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Finance**

(See the Business Administration (ABUS) Degree for Transfer.)

## **Fire Science**

(See Public Safety and Emergency Services Institute)

## **Fitness and Sport Sciences**

Students desiring a career in physical education or exercise sciences should pursue the Associate of Arts Degree for Transfer in Liberal Arts in this catalog. This degree provides the first two years of required studies which can be applied to a degree at a four-year college or university. In addition, the Fitness and Sport Sciences department offers preparation courses for students interested in a variety of fitness-related fields. Students should be aware that upward mobility in the fitness industry usually requires a degree with course emphasis in the field for advancement.

Completion of an Associate of Arts Degree for Transfer in Liberal Arts requires general education courses (AGEC) which strengthen basic skills and provide knowledge to succeed in work and life. The degree allows for approximately fifteen credits in the major area. Students who plan to pursue a major in Physical Education need to meet with a department advisor or counselor to plan their studies. It is highly recommended that students complete the following courses as the foundation of their transfer degree: FSS 279-Motor Development, FSS 286-Sports Officiating, FSS 288-History and Philosophy of

Sports and Physical Education, and several credits from a variety of Processional Activity courses (FSS 208-232).

The FSS department requires that students meet the level of WRT 100-Writing Fundamentals, or WRT 106-Writing Fundamentals for International Students, before they enroll in the above FSS courses.

Students interested in becoming Fitness Professionals can be hired as employees or independent contractors, and wages vary with experience, certifications, and facility standards. While having a certificate or license is not required by law or regulated by the United States government, it is highly recommended for all Fitness Professionals, and is generally required for career advancement. A variety of courses offered by the FSS department will comprehensively prepare students academically and with hands-on training to successfully test with one or more of the national certification organizations. Courses offered by this department can also be used to fulfill professional development requirements for those already certified. Interested students need to contact a department advisor for more information and assistance with planning their studies.

Students interested in coaching can enroll in courses that provide national coaching certification with either the American Sport Education Program or the National Federation of Interscholastic Coaches Association. The certification is applicable to either individual or team sports.

The FSS department offers a large selection of courses ranging from individualized activities, such as aerobics, spinning, martial arts, weight training, racket sports, track and field, and swimming to team sports, such as basketball, volleyball, soccer, baseball, and softball. Specialized courses for senior conditioning are also available. Activity courses are listed in this catalog at the 100-level under the following prefixes: FSS-Fitness and Sport Sciences, FAR-Fitness and Recreation, and DNC-Dance.

Students are encouraged to participate in and enjoy the activity courses while a student at Pima Community College.

## **General Studies**

### **General Studies—Associate of General Studies Degree**

Program Identification Code: AGSGENRSTUDY

A general studies program degree is for students who wish to pursue a uniquely designed associate degree. Courses may be chosen from a variety of subject areas to fit into a program of study arranged by the student and a faculty advisor or counselor. An associate of general studies degree will be granted when at least 60 credit hours of study at the 100 level or higher are



completed given the fulfillment of the college reading requirement and the fulfillment of the college general education requirements. (See requirements under the General Education section.) Please see an advisor or counselor.

If the goal of the student is to transfer to a four-year institution, the student may have to complete additional freshman and sophomore level courses beyond the general studies degree program in order to become a junior at the four-year institution. The student who does have a fairly clear transfer goal may be better served by a specific associate degree listed within this catalog. An additional option for transfer students who have not determined a major/career is the Liberal Arts and Sciences degree program in this catalog. Please see an advisor or counselor.

If the goal of the student is direct employment, the general studies degree program may be used for exploration. The student may have to complete additional courses in the occupational area necessary for employment and advancement. Please see an advisor or counselor.

## Graphics and Image Technology (Offset Printing)

This program area provides training for entry-level positions in the graphic communications industry and for upgrading the skills of those already employed in the field. Instruction is offered in computer applications in offset printing, customer services, mechanical and computerized production, graphic imaging (digital and conventional), color theory, and offset presswork. Four program options are available: graphic and imaging technology certificates for direct employment and Associate of Applied Science degrees for direct employment in Graphic and Imaging Technology and Pre-Press Artist. Program courses and faculty advising are located on the Downtown Campus.

### Basic Graphics and Image Technology (Offset Printing)—Certificate for Direct Employment

Program Identification Code: CRTGRPHTEC-B

This program provides training for entry-level skills in computer applications in offset printing, paste up, process camera operations, image assembly, customer service, and small press operations. Job placements for students completing this program has been good.

#### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
GRA 111	Introduction to Offset Printing	3	
GRA 112	Digital Processes	3	GRA 111
GRA 113	Customer Service Technology	3	
GRA 116	Graphic Imaging (Digital and Conventional)	3	GRA 111
GRA 202	Offset Presswork	3	GRA 112

#### Support Course

MAT	Determined by assessment test at the 100 level or higher	3	
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#### Suggested Course Sequence

See a communication graphics faculty advisor or counselor.

\*For additional prerequisite information, check course section.



## Advanced Graphics and Image Technology (Offset Printing)—Certificate for Direct Employment

Program Identification Code: CRTGRPHTC-A

This program provides a continuation of the Basic Graphic and Image Technology certificate program (computerized layout, pasteup, camera operations, image assembly, customer service and small press operations). In addition, mechanical graphic production, digital graphic production and advanced presswork are included in this certificate.

### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
GRA 111	Introduction to Offset printing	3	
GRA 112	Digital Processes	3	GRA 111
GRA 113	Customer Service Technology	3	
GRA 115	Digital Production (Computerized)	3	GRA 111
GRA 116	Graphic Imaging (Digital and Conventional)	3	GRA 111
GRA 200	Publishing from the Desktop	3	*
GRA 202	Offset Presswork	3	GRA 112
GRA 222	Advanced Offset Presswork	3	GRA 202

### General Education and Support Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

3

Choose 3 credit hours from the following list:

MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

#### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

#### Mathematics

MAT 100 level or higher (except MAT 198)

#### Science

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a communication graphics faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Graphics and Image Technology (Offset Printing)—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASGRAPHTECH

This program provides a continuation of the training offered in the certificate programs. In addition, students learn offset press maintenance, color theory, advanced image assembly and color theory. The program also provides a basic general education background through management, mathematics, reading, writing and speech courses. Employment opportunities throughout the state are very good for students completing this program.

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
GRA 111	Computerized Page Layout with PageMaker	3	
GRA 112	Digital Processes	3	GRA 111
GRA 113	Customer Service Technology	3	
GRA 115	Digital Production (Computerized)	3	GRA 111
GRA 116	Graphic Imaging (Digital and Conventional)	3	GRA 111
GRA 200	Publishing from the Desktop	3	*
GRA 201	Color Theory and Practice	3	GRA 116
GRA 202	Offset Presswork	3	GRA 112
GRA 221	Advanced Graphic Imaging (Digital and Conventional)	3	GRA 116
GRA 222	Advanced Offset Presswork	3	GRA 202
GRA 225	Offset Production	3	GRA 202

### Support Courses

CGR 130	Production Techniques and Processes I	3	*
CGR 230	Production Tech and Processes II	4	*
GRA 199	Co-op Related Class in GRA	1	*
GRA 199	Co-op Work in GRA	2	*
GRA 299	Co-op Related Class in GRA	1	*
GRA 299	Co-op Work in GRA	2	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

6

MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

#### Analysis and Critical Thinking

6

##### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

##### **Science**

Any AGECE categorical requirement from the Biological/Physical Science List

##### **Critical Thinking**

PHI 120

#### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a graphic image technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Graphics and Image Technology—Pre-Press Artist Option—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASPRESSARTS

This option prepares students to work in print shops and in-house graphic departments where both art and printing skills are required. They are qualified for employment as layout graphics or production artists. Entry requirements for the Pre-Press Artist option are CGR 100, 110, 120.

### Required Courses (66 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CGR 101	Color Rendering	4	CGR 100
CGR 111	Typography	3	*
CGR 112	Graphic Design I	4	*
CGR 121	Desktop Publishing for Communication	4	*
CGR 122	Graphics: PageMaker	4	*
CGR 130	Desktop Graphics: Adobe Illustrator	4	*
CGR 220	Production Techniques and Processes I	3	*
CGR 230	Desktop Publishing for Communication	4	*
CGR 230	Graphics: QuarkXpress	4	*
CGR 230	Production Techniques and Processes II	4	*
GRA 111	Introduction to Offset Printing	3	
GRA 112	Digital Processes	3	GRA 111
GRA 116	Graphic Imaging (Digital and Conventional)	3	GRA 111
GRA 201	Color Theory and Practice	3	GRA 116
GRA 202	Offset Presswork	3	GRA 112
GRA 221	Advanced Graphic Imaging (Digital and Conventional)	3	GRA 116

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

6

MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking

6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking. MAT 100 level or higher (except MAT 198)

#### Science

MAC 275  
Any AGECE categorical requirement from the Biological/Physical Science List

#### Critical Thinking

PHI 120

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list  
Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list  
Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a graphics image technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## History

Program Identification Code: AOALIBRALART

A student planning on obtaining a degree with an option in History should follow the Associate of Arts Degree for Transfer in Liberal Arts.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

## Hospitality/Tourism

This program area prepares students for service in the broad-based hospitality/tourism industry. Tucson's rapid growth affords many opportunities within this industry which encompasses hotels, motels, clubs, food and beverage establishments, and tourist services. Career opportunities are excellent as nearly one out of every six jobs in Arizona is related to the hospitality industry.

The program options are designed to prepare students to enter the hospitality/tourism work force and/or to update people already employed in the industry. The program options include an Associate of Arts Degree for Transfer,

Recreation and Tourism Management-Associate of Arts Degree for Transfer and Associate of Applied Science Degrees in Hospitality Management, Travel Industry Operations, and Culinary Arts. The Hospitality Management Degree offers seven specialty areas from which the student may choose one of the following options: Housekeeping Management, Hotel/Resort Management, Food and Beverage Management, Sales and Convention Service Management, Accounting Management, Human Resources Management, and Language Specialty. Faculty advisors or counselors in the program area are located on the Downtown Campus.

## Hospitality—Associate of Arts Degree for Transfer

Program Identification Code: AOAHSPITALITY

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. Northern Arizona University School of Hotel and Restaurant Management has a partnership agreement with Pima Community College to offer a Bachelor's degree in the Tucson area. A stipulation of this agreement provides a waiver of 12 upper division credit hours for liberal studies providing the student completes the Associate of Arts Degree for Transfer in Liberal Arts with Pima Community College. Students interested in the bachelor's degree in Hotel and Restaurant Management should see an NAU advisor or counselor located at the Downtown Campus.

### Entrance Requirement:

Entry requirements for the Associate of Arts Degree for Transfer in Liberal Arts are REA 112, WRT 100 or assessment at WRT 101, MAT 122 or assessment at MAT 151, and HDE 101.

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

HOS 100	Introduction to Hospitality Industry	3
HOS 101	Front Office Procedures	3
HOS 150	Executive Housekeeping I	3
RCF 101	Principles of Restaurant Operations	3
RCF 102	Foodservice Specialty: Culinary Preparation I	3

### Support Courses

ACC 101	Financial Accounting	3	
CSC 105	Survey of Microcomputer Uses	3	
ECN 200	Basic Economic Principles	3	MAT 092

LANG Second Language: 8  
Completion of two semesters of a language course  
numbered 110, 111, 210 or 211

### Hospitality Elective 3

See a hospitality faculty advisor or counselor for the  
selection of a hospitality elective.

### Arizona General Education Curriculum (AGEC-A) Requirements 35

(See General Education section of this catalog for  
Associate of Arts Degree for Transfer in Liberal Arts  
course list.)

By completing the general education portion of this degree (AGEC-A), the  
student will fulfill all lower-division general education requirements at the  
University of Arizona (UA), Arizona State University (ASU), and Northern  
Arizona University (NAU). The AGECE-A is also applicable to the University of  
Phoenix (UPHX) and may be applicable to other colleges and universities.  
See an advisor or counselor.

If a student does not complete all 35 credits of the AGECE, lower-division  
general education is not fulfilled at all Arizona public universities. When the  
AGECE is not completed, the credits will be evaluated by the university on a  
course by course basis using the *Course Equivalency Guide* and applied  
depending on the degree and college.

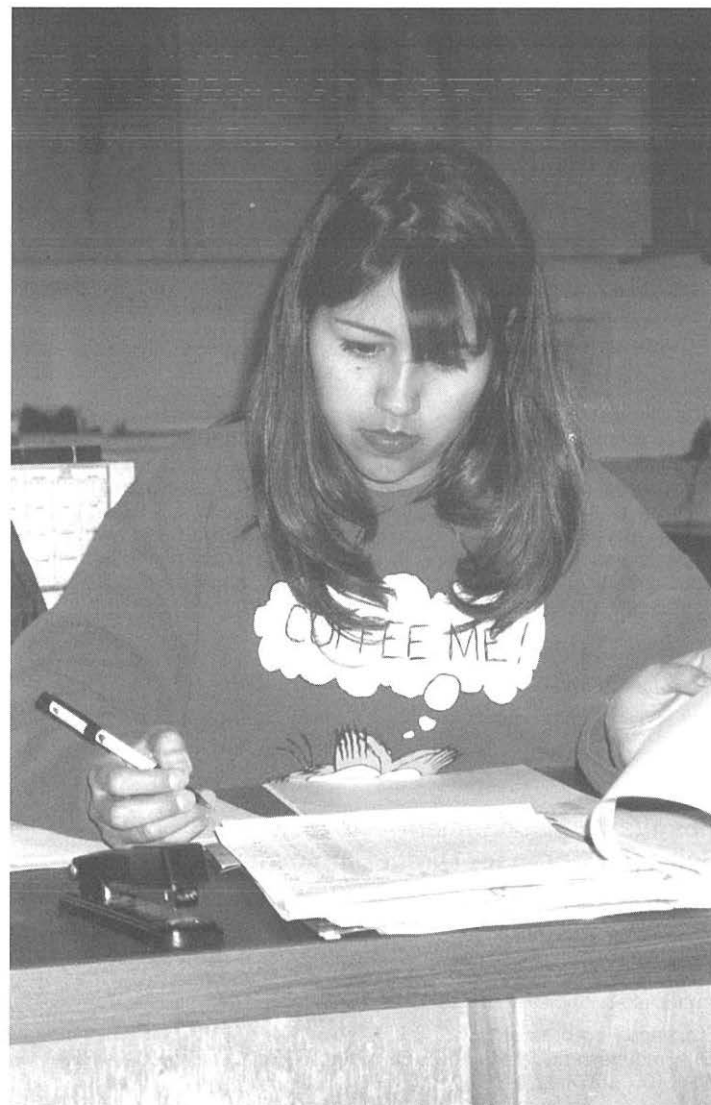
*See an advisor or counselor and complete courses in the following cate-  
gories for a total of 35 credits. The courses listed under each of these AGECE  
categorical requirements are found in the General Education section of this  
catalog in the Transfer General Education List.*

**English Composition** 6  
Complete WRT 101 and 102.

**Humanities and Fine Arts** 6  
(Select one course from the ART LIST and one course  
from the HUMANITIES/HISTORICAL PERSPECTIVE  
LIST. It is best to select courses from this list that fulfill  
the I, C, and G AGECE Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3  
(Complete MAT 142 or higher.)



**Social and Behavioral Sciences** 6  
(Select courses with at least two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)

**Other Requirement Options** 6  
(The support courses in second language fulfill this requirement. This requirement is completed.)

**AGEC Special Requirements** \*  
A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### **Suggested Course Sequence**

See a hospitality faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Hospitality Management—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASHOSPTYMGT

This degree prepares students for entry into the lodging industry. Principles of hotel/management, front office, housekeeping, accounting, law, food and beverage management, financial management and hospitality marketing are included.

### **Entrance Requirements:**

Entry requirements for the Associate of Applied Science degree are REA 112, WRT 100, MAT 092, HDE 101.

### **Required Courses (65-70 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - See entrance requirements above.

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

HOS 100	Intro to the Hospitality Industry	3	
HOS 101	Front Office Procedures	3	
HOS 102	Hospitality Financial Accounting I	3	*
HOS 202	Hospitality Financial Accounting II	3	HOS 102
HOS 235	Hospitality Law	3	HOS 100
HOS 245	Hospitality Human Resource Management	3	HOS 100

### **Support Courses**

HOS 199	Co-op Related Class in HOS	1	
HOS 199	Co-op Work in HOS	3	*
HOS 299	Co-op Related Class in HOS	1	
HOS 299	Co-op Work in HOS	3	*
TVL 250	Leadership in Recreation and Tourism	3	

### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### **Communication**

6

SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### **Analysis and Critical Thinking**

6

### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)



**Science**

Any AGECE categorical requirement from the  
Biological/Physical Science List

**Critical Thinking**

PHI 120

**Global Awareness**

6

This requirement must be met by taking a course from  
at least two of the categories and one of the courses  
must contain cultural diversity criteria, a C or G design-  
ation from the AGECE categorical requirements lists.

**Humanities and Fine Arts**

First semester of a language sequence\*\*

SPA 103 recommended\*\*\*

**Social and Behavioral Sciences**

Any AGECE Categorical requirement from the  
Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other  
Requirement Options: (d) International and Multi-  
Cultural Studies list (must be a C or G designated  
course)

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural  
diversity requirement.

**Computer Literacy**

0-3

CSA 173

**Choose one of the following specialty areas:**

Department chair/program advisor or counselor  
approval is recommended in the selection of the  
specialty areas:

**Housekeeping Management**

HOS 150	Executive Housekeeping I	3	
HOS 151	Executive Housekeeping II	3	HOS 150
HOS 152	Executive Housekeeping III	3	HOS 151
HOS 153	Executive Housekeeping IV	3	HOS 152
MAN 110	Human Rel in Business and Industry	3	
MAN 122	Supervision	3	

**Hotel/Resort Management**

HOS 112	Hospitality - Alcohol Intervention Procedures	1	
HOS 120	Meetings and Convention Mgmt I	3	
HOS 150	Executive Housekeeping I	3	

HOS 211	Hospitality Sales and Marketing Applications I	3	
HOS 212	Hospitality Sales and Marketing Applications II	3	
RCF 101	Principles of Restaurant Operations	3	

**Food and Beverage Management**

HOS 104	Hotel Food and Beverage Mgmt	3	
HOS 112	Hospitality - Alcohol Intervention Procedures	1	
RCF 101	Principles of Restaurant Operations	3	
RCF 102	Foodservice Specialty: Culinary Preparation I	3	RCF 101
RCF 107	Restaurant Sanitation	3	
RCF 109	Food and Beverage Control	3	*
RCF 110	Restaurant/Banquet Service	3	
RCF 120	Nutrition in Foodservice	2	

**Sales and Convention Service Management**

HOS 120	Meetings and Convention Management I	3	
HOS 130	Meetings and Convention Management II	3	HOS 120
HOS 131	Meetings and Convention Management III	3	HOS 130
HOS 211	Hospitality Sales and Marketing Application I	3	
HOS 212	Hospitality Sales and Marketing Application II	3	HOS 211
RCF 201	Catering and Banquet Sales and Management	3	

**Accounting Management**

ACC 102	Managerial Accounting	3	*
ACC 150	Payroll Accounting	3	*
ACC 200	Accounting on the Microcomputer I	3	*
ACC 201	Intermediate Accounting I	3	ACC 102
ACC 202	Intermediate Accounting II	3	ACC 201
ACC 203	Cost Accounting	3	ACC 102

**Human Resources Management**

BUS 220	Legal Environment of Business	3	
MAN 110	Human Rel in Business and Industry	3	
MAN 122	Supervision	3	
MAN 130	Quality Systems Management	3	MAT 092
MAN 280	Business Organization and Management	3	*

Elective 3  
Complete one course from the following list:  
HOS 101, HOS 104, HOS 150, RCF 101

### Language Specialty

Second, third and fourth semester of a  
Language Sequence\*\* 12

Elective 10  
Choose courses from HOS and/or RCF subject  
areas with department chair/program advisor or  
counselor approval.

### Suggested Course Sequence

See a hospitality program advisor or counselor

\*For additional prerequisite information, check course section.

\*\*American Sign Language included.

\*\*\*If selecting the Language Specialty, then a 110 level language course is  
recommended in order to complete a four semester sequence.

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

Program Identification Code: AASCULNRYART

This program prepares students for foodservice employment in hotels and  
restaurants. Foodservice management, budgeting, and hands-on experience  
in the preparation of food are emphasized.

### Entrance Requirement

Entry requirements for the Associate of Applied Science Degree are REA 112,  
WRT 100, MAT 092, HDE 101, and RCF 101.

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
RCF 102	Foodservice Specialty: Culinary Preparation I	3	RCF 101
RCF 103	Foodservice Specialty: Baking I	3	RCF 101
RCF 104	Foodservice Specialty: Garde-Manger I	3	RCF 102
RCF 107	Restaurant Sanitation	3	

RCF 109	Food and Beverage Control	3	HOS 102
RCF 110	Restaurant/Banquet Service	3	
RCF 115	Meat Cutting for Foodservice Industry	2	
RCF 120	Nutrition in Foodservice	2	
RCF 202	Foodservice Specialty: Culinary Preparation II	2	RCF 102
RCF 203	Foodservice Specialty: Baking II	2	RCF 103
RCF 204	Foodservice Specialty: Garde-Manger II	2	RCF 104

### Support Courses

CSA 173	Computer Fundamentals	1	
ECN 200	Basic Economic Principles	3	MAT 092
HOS 199	Co-op Related Class in HOS	1	*
HOS 199	Co-op Work in HOS	3	*
HOS 206	Hospitality Human Resource Management	3	HOS 100
HOS 299	Co-op Related Class in HOS	1	*
HOS 299	Co-op Work in HOS	3	*

(\*Department Chair approval of work experience needed)

ELEC General Elective 3  
Choose one course from the HOS subject area with  
the approval of the department chair/program advisor  
or counselor.

### General Education Requirements

Students may select the General Education Courses from the list below or  
from the same program in the 1998/1999 Catalog for this academic year  
only. Please note that in many cases the General Education requirements  
are the same in both catalogs. The 1998/1999 catalog is available on the  
World Wide Web or from your faculty advisor or counselor.

### Communication 6

ASC 151 and 251  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this  
requirement to accommodate students who choose  
the transfer route.

### Analysis and Critical Thinking 6

### Mathematics

This requirement must be met by course work or by  
assessment of competency at the 100 level or higher.

Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### **Science**

Any AGEC categorical requirement from the Biological/Physical Science List

#### **Critical Thinking**

PHI 120

#### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list (must be a C or G designation)

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

#### **Suggested Course Sequence**

See a hospitality program advisor or counselor.

\*For additional prerequisite information, check course section.

### **Travel Industry Operations Options:**

(See also Recreation)

## **Travel Industry Operations—Certificate for Direct Employment**

Program Identification Code: CRTRVLINDUS

#### **Entrance Requirements:**

- ASC 111A or typing proficiency
- CSC 109A or Windows proficiency

This certificate program is designed to prepare students for travel agency management trainees. It includes all the course work in cost-effective operations, training techniques, current developments in the travel industry, and computer applications.

#### **Required Courses (18 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
TVL 101	Introduction to the Travel Industry	3	
TVL 102	Computerized Reservation Systems I	3	
TVL 103	Geography for Travel Professionals I	3	
TVL 109	Survey of Leisure Products	3	
TVL 121	Travel Sales	3	TVL 109
TVL 203	Computerized Reservation Systems II: Fares and Ticketing	3	TVL 102

#### **Suggested Course Sequence**

See a hospitality/tourism faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Travel Industry Operations Options—Tourism—Associate of Applied Science Degree for Direct Employment**

The travel and tourism industry is an exciting, fast-paced, customer service and sales oriented profession. Over the course of the program, the student is trained in essential elements of the industry including: sales and marketing, computer application including ticketing and booking procedures, leadership and communication skills, destination development and geography.

This degree prepares students for entry into either Tourism Operations or Arizona Tour Guide.

See also Recreation and Tourism Management-Associate of Arts Degree for Transfer in Liberal Arts under Recreation in this catalog.

**Entrance Requirements:**

- ASC 111A or typing proficiency
- CSC 109A or Windows proficiency

Program Identification Code: AASTOURDESDV

**Required Courses (66-67 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

TVL 101	Introduction to the Travel Industry	3	
TVL 102	Computerized Reservation Systems I	3	
TVL 103	Geography for Travel Professionals I	3	
TVL 109	Survey of Leisure Products	3	
TVL 121	Travel Sales	3	TVL 109
TVL 203	Computerized Reservation Systems II: Fares and Ticketing	3	TVL 102

**Support Courses**

CSA 173	Computer Fundamentals	1	
HOS 199	Co-op Related Class in HOS	1	
HOS 199	Co-op Work in HOS	3	*
LANG	First semester of a language sequence***	4	

**General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication**

6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* OR WRT 107 and 108

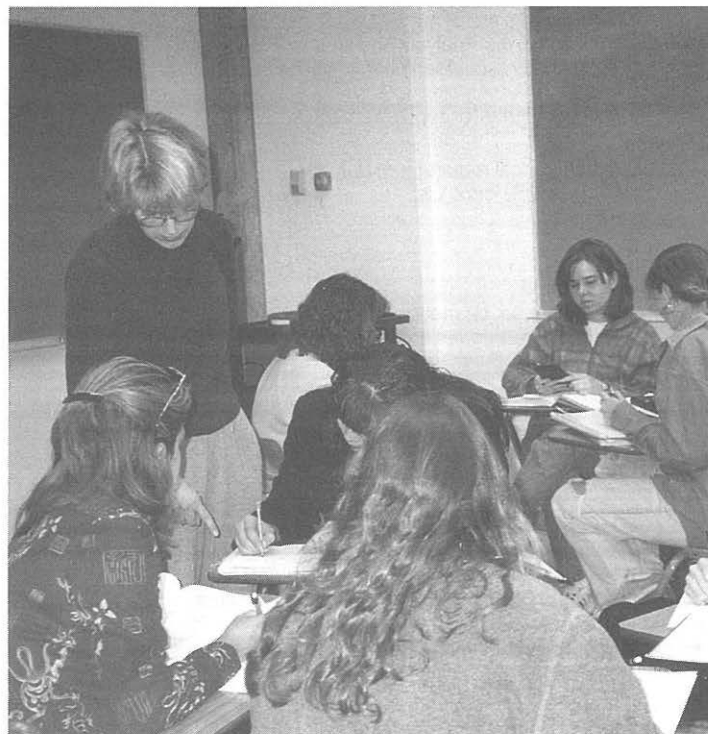
\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

**Analysis and Critical Thinking**

6

**Mathematics**

This requirement must be met by course work or by



assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

**Science**

GLG 101 (for Arizona Tour Guide option)

Any AGECE categorical requirement from the Social/ Behavioral Science list (for Tourism Operations option)

**Critical Thinking**

PHI 120

## Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

## Humanities and Fine Arts

Second semester of a language sequence

## Social and Behavioral Sciences

Any AGEC Categorical requirement from the Social/Behavioral Sciences list must be a C or G designation

Choose one of the following options:

Department chair/program advisor approval is recommended in the selection of the program option:

## Tourism Operations

TVL 104	Geography for Travel Professionals II	3	
TVL 205	Tourism Marketing	3	TVL 101
TVL 210	Leisure Delivery System	3	TVL/REC 120
TVL 211	Tour Group Development, Sales and Management	3	*
TVL 214	Destination Development	3	*
TVL 250	Leadership in Recreation and Tourism	3	
ELECT	Hospitality/Tourism Electives	3	

Complete three credit hours from the following list:  
HOS 120, 130, 211, 212

## Arizona Tour Guide

GLG 102	Introductory Geology II	4	
GLG 280	Geology of Arizona	3	*
HED 140	First Aid and Cardiopulmonary Resuscitation	1	
HIS 147	History of Arizona	3	
TVL 205	Tourism Marketing	3	TVL 101
TVL 211	Tour Group Development, Sales and Management	3	*
TVL 214	Destination Development	3	*

## Suggested Course Sequence

See a Hospitality/Tourism faculty advisor.

\*For additional prerequisite information, check course section.

\*\*Tourism Operations option must take CSC 105 and Arizona Tour Guide option must take GLG 101.

\*\*\*American Sign Language included/Spanish recommended.

# International Business Studies

(See the Business Administration (ABUS) Degree for Transfer.)

## Interpreter Training Program

### Interpreter Training Program—Associate of Applied Arts Degree for Direct Employment

Program Identification Code: AAINTPTRAIN

This curriculum provides theoretical academic, and technical training to those students desiring to pursue a degree in interpreting for the Deaf. The program includes classroom lecture, laboratory skills, and field experience in the community.

### Acceptance Into the Program:

In addition to meeting general requirements for admission to Pima Community College, the applicant must:

- Successfully complete or show an equivalency for:
  - SLG 202 - American Sign Language IV
  - REA 075 - Spelling
- Demonstrate a 12th grade reading level
- Complete an Interpreter Training Program application packet
- Receive approval by the Interpreter Training Program selection committee.

### Required Courses (67 Credit Hours) plus prerequisites.

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ITP 105	Fingerspelling and Numbers	2	SLG 102
ITP 200	Introduction to the Deaf Community	3	SLG 202
ITP 203	Linguistics of American Sign Language	3	*
ITP 205	Advanced Fingerspelling and Numbers	2	SLG 201
ITP 210	Introduction to Interpreting	3	SLG 202
ITP 215	Classifiers, Mimetic Description and ASL Literature	3	*

ITP 220	Interpreting I	4	ITP 210
ITP 250	Interpreting II	4	ITP 220
ITP 268	Etymology	2	ITP 202
ITP 270	Beginning Sign to Voice	4	SLG 202
ITP 280	Advanced Sign to Voice	4	ITP 270
ITP 285	Educational Interpreting/ Transliterating	4	ITP 220
ITP 290	Interpreter Training Field Experience	2	*

### Support Courses

ANT 215	The Nature of Language	3
HDE 130	Stress Management	
or 140	Assertiveness Training	2
SPE 102	Introduction to Oral Communication	3

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 6

WRT 101 and 102

### Analysis and Critical Thinking 6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### Science

Any AGECE categorical requirement from the Biological/Physical Science List

#### Critical Thinking

PHI 120

### Global Awareness 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

PSY 101

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See an interpreter training faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Landscape Technician

The landscape technician program options are designed to prepare students for employment in the landscape industry either as landscape maintenance and plant care technicians or as designers and/or managers of landscape systems. The former training is provided by the certificate and the latter by the Associate of Applied Science degree program. Program advisor or counselors are located on the West Campus.



## Landscape Technician—Certificate for Direct Employment

Program Identification Code: CRTLANDSCAPE

This program provides education and skills for students planning to be landscape maintenance and plant care technicians. Instruction covers definition of career goals, diagnosis, treatment and control of horticultural diseases and pests, familiarity with suitable plants for exterior and interior use, and analysis and improvement of soils for horticultural use.

### Required Courses (32 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

BIO 184	Plant Biology	4	
LTP 100	Landscape Today and Tomorrow	3	
LTP 120	Plant Pathology, Pests and Controls	4	BIO 184
LTP 130	Soils Management	4	
LTP 160	Plant Usage and Identification	3	

### Support Courses

MAT 110	Technical Mathematics I	3	*
MAT 111	Technical Mathematics II	3	MAT 110

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 3

Choose 3 credit hours from the following list:

SPE 102 or WRT 154

WRT 101 or 107

### Analysis and Critical Thinking 3

### Science

CHM 130

### Suggested Course Sequence

See a landscape faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Landscape Technician—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASLANDSCAPE

This program provides education and skills to students for employment as landscape system designers and/or managers. Instruction includes designing, estimating and implementing landscape plans; designing, installing and maintaining pressure-type irrigation systems; estimating and implementing maintenance on equipment. The Associate of Applied Science degree program includes all the requirements of the advanced certificate program.

### Required Courses (62 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

BIO 184	Plant Biology	4	
LTP 100	Landscape Today and Tomorrow	3	
LTP 120	Plant Pathology, Pests and Controls	4	BIO 184
LTP 130	Soils Management	4	
LTP 160	Plant Usage and Identification	3	
LTP 200	Landscape Management Systems	3	
LTP 205	Irrigation Design I	3	
LTP 230	Landscape Maintenance	3	
LTP 260	Basic Landscape Design	3	

### Support Courses

MAT 111	Technical Mathematics II	3	MAT 110
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LTP ELEC Landscape Technician Electives 6

Any LTP courses not listed in the core courses section (including CAD) will serve as LTP electives.

ELEC Elective 3

Select one course from the following:

BUS 100

MAN 122, 124

### General Education Requirements

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.



### **Communication**

6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### **Analysis and Critical Thinking**

6

#### **Mathematics**

MAT 110 level or higher (except MAT 198)

#### **Science**

CHM 130

### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See a landscape faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Law Enforcement Related Instruction**

(See Public Safety and Emergency Services Institute)

# Legal Assistant (Paralegal)

This program is approved by the American Bar Association and is designed to prepare students for entry-level paraprofessional positions in the legal field. The American Bar Association states that the terms legal assistant and paralegal are used interchangeably. A legal assistant or paralegal is a person, qualified by education, training or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity and who performs specifically delegated substantive legal work for which a lawyer is responsible.

Legal Assistants (Paralegals) may not give legal advice or otherwise engage in the unauthorized practice of law.

Legal Assistant work includes developing and modifying procedures used in the legal field, preparing and interpreting legal documents, preparation of a case for trial, investigation of the facts of a case, researching, selecting, assessing, compiling, and using information from the law library and other references, and analyzing and handling procedural problems.

Legal assistants may be employed by law firms, businesses, financial institutions, title and escrow companies, or government agencies. Additional positions for which they may qualify include title examiner, trust officer, contract clerk, legal investigator, and law firm administrator. An internship at an approved work site is available during the last semester of course work for students who have not had previous work experience in the legal field.

Students should also have a minimum reading capability at the twelfth-grade level in order to ensure success in the program. In addition, good organizational ability, oral and written communication skills, and ability to relate well to people are important for success in this field.

## Legal Assistant Program Objectives

To prepare students with employment entry level practical skills and knowledge for the legal assistant field, the program offers a series of courses which gives students the ability to:

1. Describe the role and responsibilities of a legal assistant within a law office and the court system.
2. Demonstrate knowledge of the law library, research skills and methods and the ability to write research memoranda and reports using proper citation form for legal sources.
3. Demonstrate knowledge of professional ethics as applied to the practice of law and the legal assistant.
4. Demonstrate the legal assistant's role during litigation and trial and the ability to prepare motions, pleading, instruments of discovery, notetaking, and daily trial recapitulation.

5. Apply legal problem solving techniques and the principles of abstract, inductive and deductive reasoning to case law and factual situations.

## Program Options:

There are two programs available from which a student may choose one. The advanced certificate carries an admissions requirement of a Baccalaureate or Associate of Arts Degree from an accredited post-secondary institution. The Associate of Applied Science Degree carries an admissions requirement of a high school diploma or the student must have passed an equivalency examination in order to register for LAS 103, 104, 106, 202, and 211.

LAS advisors are available on the Downtown Campus only.

## Legal Assistant (Paralegal)—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASLEGALASST

### Required Courses (64-67 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

LAS 101	Introduction to Legal Assistant Careers	3	
LAS 102	Civil Litigation Procedures I	3	*
LAS 103	Legal Research	3	*
LAS 104	Legal Assistant Ethics	3	*
LAS 106	Civil and Criminal Evidence	3	*
LAS 202	Civil Litigation Procedures II	3	LAS 102
LAS 211	Legal Writing	3	*
LAS ELEC	LAS Specialty Area Electives	15-16	

Complete five courses from the following LAS specialty area electives course list: (Specialty courses are not offered every semester. Consult with an LAS faculty advisor or counselor to determine class offerings.)

LAS 201	Consumer Law Procedures		LAS 101
LAS 203	Tort Law Procedures	*	
LAS 204	Wills, Trusts, and Estates	*	
LAS 206	Criminal Trial Procedures I	*	
LAS 207	Criminal Trial Procedures II	*	

LAS 208	Domestic Relations and Family Law	*
LAS 209	Bankruptcy Procedures	*
LAS 210	Public Agency Law	*
LAS 212	Law Office Computerization	*
LAS 213	Computer Assisted Legal Research	*
LAS 215	Corporate Law Procedures	*
LAS 217	Real Estate Legal Procedures	*
LAS 290	Legal Assistant Internship	*

(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.)

### Support Courses

ACC 100	Practical Accounting Procedures	
or 101	Financial Accounting	3
BUS 220	Legal Environment of Business	3
SPE 110	Public Speaking	3

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 6

WRT 101 and 102

### Analysis and Critical Thinking 6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 110, 111, 198, 297)

#### Science

Choose any course from the following list:

AST 101, 102  
 BIO 100 or higher (except BIO 198, 297, 298)  
 CHM 100 or higher (except CHM 196, 198, 297)  
 GEO 101, 102  
 GLG 101, 102  
 PHY 115, 121, 122, 210, 216, 221

### Critical Thinking

PHI 120

### Global Awareness 6

This requirement must be met by taking a course from the two categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

### Humanities and Fine Arts

HIS 101, 102

HUM 251, 252, 253, 260

LIT 261, 266, 267

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language list that has a G designation

### Social and Behavioral Sciences

POS 110 or 220

### Computer Literacy 1-3

CSA 173 or 174 or 175

### Suggested Course Sequence

See a legal assistant faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Legal Assistant (Paralegal)—Advanced Certificate for Direct Employment

Program Identification Code: CRDLEGALASST

**Admissions Requirement:** A Baccalaureate or Associate of Arts Degree for Transfer in Liberal Arts from an accredited postsecondary institution.

### Required Courses (42-43 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
LAS 101	Introduction to Legal Assistant Careers	3	
LAS 102	Civil Litigation Procedures I	3	*
LAS 103	Legal Research	3	*
LAS 104	Legal Assistant Ethics	3	*

LAS 106	Civil and Criminal Evidence	3	*
LAS 202	Civil Litigation Procedures II	3	*
LAS 211	Legal Writing	3	*

LAS ELECT LAS Specialty Area Electives 15-16

Complete five courses from the following LAS specialty area electives course list:

(Specialty courses are not offered every semester. Consult with an LAS faculty advisor to determine class offerings.)

LAS 201	Consumer Law Procedures	3	*
LAS 203	Tort Law Procedures	3	*
LAS 204	Wills, Trusts, and Estates	3	*
LAS 206	Criminal Trial Procedures I	3	*
LAS 207	Criminal Trial Procedures II	3	*
LAS 208	Domestic Relations and Family Law	3	*
LAS 209	Bankruptcy Procedures	3	*
LAS 210	Public Agency Law	3	*
LAS 212	Law Office Computerization	3	*
LAS 213	Computer Assisted Legal Research	3	*
LAS 215	Corporate Law Procedures	3	*
LAS 217	Real Estate Procedures	3	*
LAS 290	Legal Assistant 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.)

### General Education Courses

Students may meet the following general education course requirements by transfer of Communication, and Analysis and Critical Thinking course work from a Baccalaureate or Associate of Arts Degree.

#### Communication 3

Choose 3 credit hours from the following list:

WRT 101 or 102, or 107 or 108

#### Analysis and Critical Thinking 3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

#### Mathematics

MAT 100 level or higher (except MAT 110, 111, 198, 297)

#### Science

Any course from the following list:

AST 101, 102

BIO 100 or higher (except 198, 297, 298)

CHM 100 or higher (except 196, 198, 297)

GEO 101, 102

GLG 101, 102

PHY 115, 121, 122, 210, 216, 221

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a legal assistant faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Legal Secretary

This instructional program is designed to prepare students for a career as a legal secretary. The curriculum contains courses that enable one to develop mastery of secretarial skills and to acquire the specific knowledge and understanding of the legal office setting. The program prepares the student to develop an understanding of the ethical responsibilities of the legal secretary profession and the role legal secretaries perform in the delivery of legal services. The program curriculum enables the student to develop written communication skills and legal secretarial procedure skills. The program curriculum also covers the topics of legal terminology, techniques and procedures.

### Legal Secretary—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASLGLSECRTY

#### Required Courses (60 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

LSY 101	Intro to the Legal Secretary Profession	3	
LSY 201	Legal Secretary Procedures	3	LSY 101
LSY 210	Legal Office Accounting and Financial Procedures	3	LSY 201
LSY 290	Legal Secretary Field Experience	3	LSY 201

### Support Courses

AJS 101	Introduction to Administration of Justice Systems	3	
ASC 111	Computer Keyboarding and Document Production	3	
ASC 112	Advanced Computer Keyboarding: Document Preparation	3	ASC 111
ASC 141	Legal Terms	3	
CSC 105	Survey of Microcomputer Uses	3	
CSS 101	Survey of Court Systems I	3	
RIM 132	Records Management Filing Systems	3	

### Electives

9

Students, in consultation with an advisor or counselor, will select 9 credit hours of electives depending upon their specific future career goals.

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

6

ASC 151 and 251  
MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking

6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### Science

Any AGECE categorical requirement from the Biological/Physical Science List

### Critical Thinking

PHI 120

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.



# Machine Tool Technology

This program area is designed to provide the skills, knowledge, and practice needed for employment as a machinist. Depending upon their qualifications, students may find positions in the local job market as machine operators, conventional machinists, CNC machinists, CNC programmers, mechanical inspectors or machinist apprentices.

Three program options are available: Conventional Machinist certificate and Computer Numerical Control (CNC) Machinist certificate, and the Associate of Applied Science Degree in Machine Tool Technology.

Machine tool training includes a broad range of techniques used in metals manufacturing in addition to support courses in manufacturing processes, metallurgy, math, drafting, and computer aided machining. Such a background can provide a base from which students may pursue a baccalaureate degree in manufacturing engineering technology or mechanical engineering. Students interested in obtaining the higher degree should contact the college or university of their choice to determine transfer requirements.

Good mechanical aptitude and good basic skills in reading, writing, and mathematics are important for success in this program. It is suggested that all students confer with a machine tool advisor or counselor on the Downtown Campus before registering.

## Computer Numerical Control (CNC) Machinist—Certificate for Direct Employment

Program Identification Code: CRTCNCMACHIN

This program is designed to prepare students for entry level employment as CNC machinists, CNC machine operators, and CNC programmers. This certificate can be applied toward the Associate of Applied Science Degree in Machine Tool Technology.

**Entrance Requirement:** MAC 100 or a score of 80% or better on a machine tool assessment test.

### Required Courses (48 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
MAC 103	Applied Shop Mathematics I	3	*
MAC 104	Applied Shop Mathematics II	3	MAC 103
MAC 110	Machine Shop I	4	*

MAC 120	Machine Shop II	4	*
MAC 205	Mechanical Inspection	4	*
MAC 250	Computer Numerical Control (CNC) Mill Programming I	4	*
MAC 255	Computer Numerical Control (CNC) Mill Programming II	4	MAC 250
MAC 257	Computer Aided Machining (CAM) I	4	*
MAC 258	Computer Aided Machining (CAM) II	4	MAC 257

### Support Courses

CAD 101	Computer Aided Drafting Fundamentals	4	
CAD 152	Technical Drafting	4	CAD 101

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 3

Choose 3 credit hours from the following list:

SPE 120  
WRT 101 or 107

### Analysis and Critical Thinking 3

### Science

MAC 275

### Suggested Course Sequence

See a machine tool technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Conventional Machinist—Certificate for Direct Employment

Program Identification Code: CRTMACHSTAND

This program is designed to prepare students for entry level employment as conventional machinists, machine operators, mechanical inspectors, and machinist apprentices. It is also the foundation for continuing into the CNC Machinist certificate, and the Associate of Applied Science Degree in Machine Tool Technology.

**Entrance Requirement:** MAC 100 or a score of 80% or better on a machine tool assessment test.

### Required Courses (37 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
MAC 103	Applied Shop Mathematics I	3	*
MAC 104	Applied Shop Mathematics II	3	MAC 103
MAC 110	Machine Shop I	4	*
MAC 120	Machine Shop II	4	*
MAC 205	Mechanical Inspection	4	*
MAC 210	Jig and Fixture Design	4	*

### Support Courses

CAD 101	Computer Aided Drafting Fundamentals	4
Other Elective		4

Complete 4 credit hours from the following list with the approval of the program advisor or counselor.

ASP, CAD, CSC, ENG, FAB, MAC, MNT, PRO, PIM, WLD

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 3

Choose 3 credit hours from the following list:

SPE 120  
WRT 101 or 107

### Analysis and Critical Thinking 3

### Science

MAC 275

### Suggested Course Sequence

See a machine tool technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Machine Tool Technology—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASMACHNT00L

This program is designed to prepare students for entry level employment in any of the machinist occupations, mechanical inspection, or as a foundation for higher degrees in mechanical or manufacturing engineering.

**Entrance Requirement:** MAC 100 or a score of 80% or better on a machine tool assessment test.

### Required Courses (71 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

MAC 103	Applied Shop Mathematics I	3	*
MAC 104	Applied Shop Mathematics II	3	MAC 103
MAC 110	Machine Shop I	4	*
MAC 120	Machine Shop II	4	*
MAC 205	Mechanical Inspection	4	*
MAC 210	Jig and Fixture Design	4	*
MAC 250	Computer Numerical Control (CNC) Mill Programming I	4	*
MAC 255	Computer Numerical Control (CNC) Mill Programming II	4	MAC 250
MAC 257	Computer Aided Machining (CAM) I	4	*
MAC 258	Computer Aided Machining (CAM) II	4	MAC 257

### Support Courses

CAD 101	Computer Aided Drafting Fundamentals	4	
CAD 152	Technical Drafting	4	CAD 101
CAD 172	Geometric Dimensioning/Tolerancing	3	*
Other Electives		4	

Complete 4 credit hours from the following list with the approval of the program advisor or counselor.

ASP, CAD, CSC, ENG, FAB, MAC, MNT, PRO, PIM, WLD

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### **Communication**

SPE 120 and WRT 154

WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### **Analysis and Critical Thinking**

#### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### **Science**

MAC 275

#### **Critical Thinking**

PHI 120

### **Global Awareness**

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

6

6

6



### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See a machine tool technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Mathematics**

### **Associate of Arts Degree for Transfer in Liberal Arts**

Program Identification Code: AOALIBRALART

A student planning on obtaining a mathematics degree should follow the Associate of Arts Degree for Transfer in Liberal Arts. A student seeking a degree must take the math, writing, and reading assessment exams. The student should then meet with a mathematics faculty advisor to plan courses. The student who plans on transferring to an upper division school to complete his/her degree should also contact an advisor or counselor from their chosen school for verification of transfer courses.

# Media Communications

Persons trained in media communications can work in a variety of jobs in the production of television programs, films and publications. The field includes such jobs as writer, editor, director, camera operator, and graphic designer.

Students can choose a major in print and electronic journalism, or digital and film arts. In both programs, a student can obtain an Associate degree and become employed or continue at a four-year college or university. A certificate is also offered in digital and film arts. Both degrees emphasize extensive study preparing the student for employment in print, electronic media, or in film making.

Students interested in a university transfer program should follow the Associate of Arts Degree for Transfer in Liberal Arts program as detailed in this catalog and consult a media faculty advisor or counselor. A student planning on obtaining a degree with an option in the Print and Electronic Journalism or an option in the Digital and Film Arts should follow the Associate of Arts Degree for Transfer in Liberal Arts.

Instruction includes television camera operation, video editing, studio production, audio production, desktop publishing, paste-up, art and graphic design, computer applications in media, electronic field production, electronic news gathering, film production, film editing, lighting, script writing, news writing, reporting, copy editing, and photography. The Associate Degree programs also involve students as interns at work sites in the community through cooperative education courses. Student activities also include *Aztec Press*, an award-winning student newspaper published weekly, an on-line Web edition of the newspaper, and student-produced films and videos which are aired locally on cable television and shown in local media arts centers.

## Print and Electronic Journalism—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASPRNTMEDIA

This program is designed to prepare students for employment as desktop publishers, graphic designers and artists, newspaper paste-up and layout persons, reporters, freelance writers, small publication editors and journalism advisors or counselors, copy editors, visual journalists and print design specialists. Cooperative education opportunities are available on small publications, daily and weekly newspapers, magazines on-line, and specialty publications. Students must complete at least six credit hours of media communications courses before being placed at work sites. Students may also work on the *Aztec Press*, the student-produced newspaper, in the areas mentioned above. They may also express their creativity through editorials, cartoons, feature stories and photography. Helpful qualifications for success

in this field are good writing and communication skills and an interest in art, design, layout, computers, reporting, editing and visual journalism.

### Required Courses (63 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CSC 105	Survey of Microcomputer Uses		
or 107	Macintosh Software Applications	3	
MEC 101	Intro to Reporting and Media Writing	3	
MEC 102	Survey of Media Communications	3	
MEC 188	Desktop Publishing for Journalism and Media Communication	3	
MEC 193	Journalism Workshop	3	MEC 101
MEC 199	Co-op Related Class in MEC	1	*
MEC 199	Co-op Work in MEC	2	*
MEC 230	Advanced Reporting	3	MEC 101
MEC 240	Editing, Layout, and Design	3	MEC 101
MEC 280	Photojournalism	3	MEC 101

### Support Courses

WRT 101	Writing I	3	*
WRT 102	Writing II	3	WRT 101

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	6
MEC 101 and SPE 120	

<b>Analysis and Critical Thinking</b>	6
---------------------------------------	---

### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

## Science

Any AGECE categorical requirement from the Biological/Physical Science List

## Critical Thinking

PHI 120

## Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

## Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

## Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

## Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

## Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

Electives

15

ART 140, 141

BUS 100

CGR 121, 122, 221

GRA 112, 115, 116

MEC 189, 196, 198, 235, 260, 295, 296 and 299 (class and work)

MKT 125

## Suggested Course Sequence

See a media communications faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Print and Electronic Journalism—Associate of Arts Degree for Transfer

Program Identification Code: AOALIBRALART

A student planning on obtaining a print and electronic journalism 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 journalism. Those interested in reporting should have a well-rounded background with emphasis on interviewing, writing, and storytelling skills. Typing and familiarity with word processing are also necessary. Photojournalism is an option for students who have basic dark room skills and who are interested in black-and-white and color photography. Those interested in publication production should have a background in art, design, graphics, and computers.

Verification of transfer courses should be established with the transfer university or college or a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

## Digital and Film Arts—Certificate for Direct Employment

Program Identification Code: CRTDIGIFILM

The Digital and Film Arts certificate is an intensive, hands-on program designed to prepare students for positions as media center managers, television news camera persons, television production camera persons, television news tape editors, television commercial producers, scriptwriters and audio technicians. Successful graduates will be able to work in various film formats, digital video formats, analog video formats, make simple repairs to various equipment, recommend equipment purchases and assess media production needs.

Cooperative education opportunities exist in television stations, production centers, industrial video facilities and audio production studios. To be eligible, students must have completed at least six credit hours of media communications classes, have available time to work on site and have access to

necessary transportation. A good background of writing courses is strongly recommended for students entering this field. Aptitudes for mechanics, graphic design, art, music and verbal expression are also helpful.

### Required Courses (47 Credit Hours)

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

MEC 102	Survey of Media Communications	3	
MEC 124	Writing for Film and Television	3	*
MEC 125	Beginning Video Production	3	MEC 124
MEC 175	Cinematography	3	*
MEC 199	Co-op Related Class in MEC	1	*
MEC 199	Co-op Work in MEC	2	*
MEC 211	Lighting for Film and Video	4	*
MEC 215	Advanced Cinematography	4	MEC 175
MEC 225	Advanced Video Production	4	MEC 125
MEC 275	Basic Audio Production	3	MEC 124
MEC 276	Advanced Audio Production	4	MEC 275

### Support Courses

MEC 271	Film/Video Production Financing	3	MEC 124
MEC 285	Documentary Television and Film Production	4	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

3

Choose 3 credit hours from the following list:

MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101

#### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

#### Mathematics

MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a media communications faculty advisor or counselor.

\*For additional prerequisite information, check course section.

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

Program Identification Code: AASDIGIFILM

This degree option is designed to qualify students to be television camera operators, videotape editors, television writers, film camera operators, film editors, television writers, media center directors, audio specialists, producers and directors of small format productions. Students are trained in all aspects of television production and film production, including various film formats, digital video formats, analog video formats, editing all formats, and planning and producing media productions. The latter involves script writing, location, lighting, equipment purchasing and equipment repair and budgeting. Cooperative education opportunities in the past have included placement in television stations, production companies, industrial production facilities, and out-of-state productions as production assistants. Completion of six credit hours in MEC is required for co-op placement. Strong writing skills are important for success in this field. A creative background in art, music, design, computers, and electronics is also helpful but not required.

### Required Courses (65-67 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

CSC 100	Introduction to Computers and Information Systems		*
or 107	Macintosh Software Applications	3	
MEC 102	Survey of Media Communications	3	
MEC 124	Writing for Film and Television	3	*
MEC 125	Beginning Video Production	3	MEC 124
MEC 175	Cinematography	3	*



MEC 199	Co-op Related Class in MEC	1	*	
MEC 199	Co-op Work in MEC	2	*	
MEC 211	Lighting for Film and Video	4	*	
MEC 215	Advanced Cinematography	4		MEC 175
MEC 225	Advanced Video Production	4		MEC 125
MEC 275	Basic Audio Production	3		MEC 124
MEC 276	Advanced Audio Production	4		MEC 275
MEC 285	Documentary Television and Film Production	4	*	

ELEC Electives 6-8

Select two of the following:

MEC 127, 174, 176, 177, 216, 271, 281, 299

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6  
WRT 101 and 102

**Analysis and Critical Thinking** 6

### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science List

### Critical Thinking

PHI 120

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy** 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a media communications faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Telecommunications Sequence—Associate of Arts Degree for Transfer in Liberal Arts

Program Identification Code: AOALIBRALART

A student planning on obtaining a telecommunications 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. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

# Microbiology

Program Identification Code: AOSSCIENCE

A student planning on obtaining a degree with an option in Microbiology should follow the Associate of Science Degree for Transfer.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

# Molecular/Cellular Biology

Program Identification Code: AOSSCIENCE

A student planning on obtaining a degree with an option in Molecular/Cellular Biology should follow the Associate of Science Degree for Transfer.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

# Music

This program is designed to prepare students to become musical performers, composers, conductors, teachers, researchers, or program directors. Employment opportunities exist in such places as schools, church and community organizations, music publication, band and orchestras. Students receive instruction to develop aural, composing, ensemble, and solo skills in all areas of music. Cooperative education opportunities include performance for art galleries, a musical theater, a pep band, etc. The program is adaptable for part-time as well as full-time attendance and emphasizes close contact between teachers and students through small classes and individual attention. Faculty members are all active professional performers. For success in this program, it is important to have some background in music and to possess reading and listening skills, knowledge of repertoire, and self-discipline. Program advisors or counselors are available on the West Campus.

## Music—Associate of Arts Degree for Transfer

Program Identification Code: AOAMUSIC

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on A.A. and A.S. degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (66 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

Select two of the following three courses:

MUS 120	Concert Band I		*
or 130	Chorale (SATB)		*
or 131	College Singers (SATB)	6	*
MUS 125	The Structure of Music I	3	
MUS 126	The Structure of Music II	3	MUS 125
MUS 127	Aural Perception I	1	*
MUS 128	Aural Perception II	1	MUS 127
MUS 141	Piano Class I	1	
MUS 142	Piano Class II	1	MUS 141
MUS 143	Piano Class III	1	MUS 142
MUS 144	Piano Class IV	1	MUS 143
MUS 145	Applied Music—Private Instruction	2	
MUS 146	Applied Music—Private Instruction	2	MUS 145
MUS 201	History and Literature of Music I	3	MUS 102
MUS 202	History and Literature of Music II	3	MUS 102
MUS 225	The Structure of Music III	3	MUS 125
MUS 226	The Structure of Music IV	3	MUS 125
MUS 227	Aural Perception III	1	MUS 127
MUS 228	Aural Perception IV	1	MUS 127
MUS 247	Applied Music—Private Instruction	2	MUS 146
MUS 248	Applied Music—Private Instruction	2	MUS 247

### Arizona General Education Curriculum

(AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of

Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGEC, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

<b>English Composition</b>	6
<b>Humanities and Fine Arts</b> (MUS 120 or 130 or 131 and MUS 201 fulfill this requirement. <u>This requirement is completed.</u> )	9
<b>Biological and Physical Sciences</b>	8
<b>Mathematics</b> (Complete MAT 142 or higher.)	3
<b>Social and Behavioral Sciences</b> (Select courses with at least two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)	6-9
<b>Other Requirement Options</b>	0-3
<b>AGEC Special Requirements</b> A student is required to fulfill each of the following AGEC Special Requirements:	*
1. Intensive writing and critical inquiry (I)	
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)	
3. Global diversity (G)	

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a music faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Nursing

### OVERVIEW

Pima Community College offers a variety of educational alternatives for students who seek to enter the nursing field. These alternatives are included in a program which prepares graduates to function in the role of Registered Nurse, Licensed Practical Nurse, or certified Nursing Assistant.

Upon successful completion of a specified portion or all of the program, the graduate is eligible to take the required registry and licensure examination. Graduates are prepared to enter the workforce at the registered nurse, licensed practical nurse, or nursing assistant level.

The **Associate Degree Nursing Program** can be completed only at the West Campus. An Associate of Applied Science degree for Direct Employment can be granted to the student who successfully completes two years or four semesters of the Associate Degree Nursing Program.

The **Practical Nursing Program** can be completed at the West Campus or the Center for Training and Development. The Practical Nurse Program at the Center for Training and Development does not provide college credit.

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

The Associate Degree Nursing (ADN) Program prepares the student to enter nursing practice as a registered nurse.

This program is approved by the Arizona State Board of Nursing and accredited by the National League of Nursing Accrediting Commission (NLNAC), 61 Broadway, New York, NY 10006, Tel: 212-363-5555 x153. Students satisfactorily completing this curriculum will graduate with an Associate of Applied Science degree in nursing. Graduates of this program will be eligible to take the National Council Licensure Examination (NCLEX-RN) to qualify for as a registered nurse.

Admission or graduation from the program does not guarantee obtaining a license or certificate to practice nursing. Licensure and certification requirements and the subsequent procedures are the exclusive right and responsibility of the Arizona State Board of Nursing. Students must satisfy the requirements of the Nurse Practice Act Statutes, Rules and Regulations (August 1998) independently of any college or school requirements for graduation.

If convicted of a felony, an applicant for licensure/certification must submit proof that they have completed any sentence including imprisonment, probation, parole, community supervision or any form of court supervision. The Arizona Nurse Practice Act (Sections 32-1601; 32-1632; 32-1637) states "If convicted of one or more felonies, has received an absolute discharge from the sentences for all felony convictions five or more years prior to the date of

filing an application." Examples of situations which may prohibit licensure and certification include, but are not limited to, felony/misdemeanor convictions, substance abuse, conviction of an offense involving immoral behavior, or being guilty of acts which deceive, defraud or harm the public in any way. Fingerprinting will be part of the application process for nursing assistant, LPN and RN applicants.

Program graduates may transfer to other colleges and universities for continued education at the baccalaureate level. Articulation agreements are currently in place with the University of Arizona and the University of Phoenix.

A certificate for direct employment as a practical nurse can be granted to the student who successfully completes the first year of the Associate Degree Nursing Program and the NRS 180 course. The student will be eligible to take the National Council Licensure Examination (NCLEX-PN) for licensure as a Practical Nurse (LPN).

A Nursing Assistant certificate can be granted to the student who successfully completes the first semester of the Associate Degree Nursing Program.

Students opting to leave the nursing program at the end of the first semester, or at the end of the first year, may reenter the second or third semester without need for further course work, if they reenter within one (1) year as based on space availability.

The Practical Nurse graduate from the Center for Training and Development and the Licensed Practical Nurse from the Tucson community are eligible to apply for entry into the second year of the Associate Degree Nursing (ADN) Program by completing the prerequisite requirements. If accepted, the student must successfully complete a three credit transition course (NRS 190) and meet all acceptance requirements for admission into the third semester of the Associate Degree Nursing (ADN) Program.

Students currently enrolled in accredited ADN Nursing Program out of state may apply to transfer into the second or third semester of the nursing program. Interested students should contact the HRP admissions office. Seats are dependent on evaluation of general education and nursing education course work as well as seat availability.

Interested applicants should contact the Nursing Department for specific information.

Admission to the ADN program requires a separate application procedure.

Students are encouraged to meet with an advisor or counselor.

Students seeking admission to the Associate Degree Nursing program must have either completed or be currently enrolled during the Fall semester in the following basic requirements before receiving an application:

- High school diploma or GED
- Admission to Pima Community College
- Reading assessment test score at the level of, or completion of REA 112

- Math assessment test at the level of MAT 151 or higher, or completion of MAT 122
- Chemistry placement test score to place into General Chemistry or higher, or completion of CHM 130 with a grade of C or better within the last 8 years
- BIO 201 with grade of "C" or better within the last 8 years

In addition, it is essential that nursing students 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 behavioral under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.

#### General Program Requirements

- Total required credits: 70 credit hours
- ADN course work: 35 credit hours
- General Education courses: 35 credit hours

#### Restrictions

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program department chairperson.
- Prerequisite, support and general education courses taken at other accredited colleges or universities will be evaluated for transfer by the college transcript evaluation department.

#### Minimal Grade Achievements

- Students must receive a "C" grade or better in all courses to progress to the next semester or to graduate.

#### Required Courses (70 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
NRS 104	Nursing Process I for ADN	8	*
NRS 105	Nursing Process II for ADN	8	*
NRS 201	Nursing Process III for ADN	9	*
NRS 202	Nursing Process IV for ADN	9	*
NRS 203	Trends and Issues II	1	*

#### Support Courses

BIO 201	Human Anatomy and Physiology I	4	*
BIO 202	Human Anatomy and Physiology II	4	*
BIO 205	Microbiology	4	*
ECE 117	Child Growth and Development	3	*

FSN 114	Nutrition	3	*
HCA 102	Drug Calculations	1	*
HCA 155	Pharmacology	3	*

### **General Education Courses**

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### **Communication** 6

WRT 101 and 102

### **Analysis and Critical Thinking** 6

#### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

Program prerequisites may satisfy this requirement.

#### **Science**

Prerequisites and/or support courses may satisfy this requirement.

### **Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

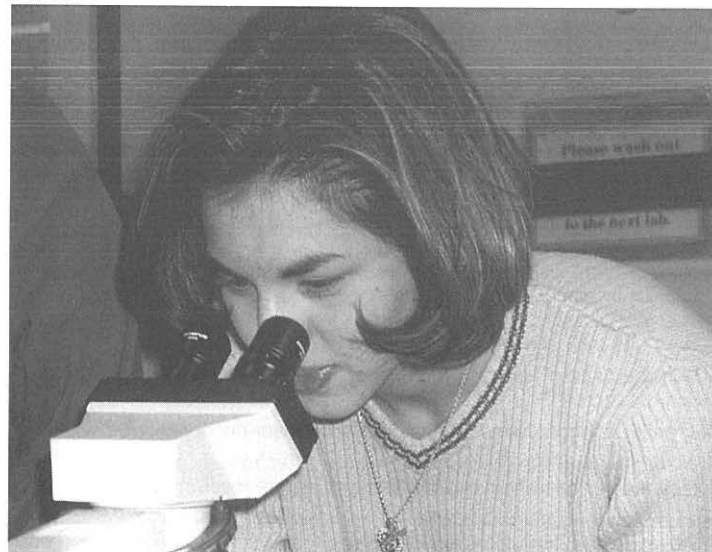
Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

PSY 101



### **Computer Literacy** 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **ADN Required Semester Course Sequence**

Prerequisite

BIO 201

Prematriculation

HCA 102

First Semester

BIO 202, HCA 155, NRS 104, WRT 101

Second Semester

BIO 205, ECE 117, FSN 114, NRS 105

Third Semester

NRS 201, NRS 203, PSY 101, WRT 102

Fourth Semester

Humanities and Fine Arts elective, NRS 202

\*For additional prerequisite information, check course section.

# Pharmacy Technology

This program provides the basic health care skills students can use as pharmacy technicians. Pharmacy technicians can find employment in hospitals (private and government), nursing care facilities, private and chain drug stores, drug manufacturers, wholesale drughouses and health maintenance organizations. Program graduates are prepared to assist the pharmacist in the packaging and distribution of medication. The certificate student will have knowledge of the professional, technical skills necessary for direct employment as a pharmacy technician. The Associate of Applied Science degree student will have the professional, technical skills with additional education in administration, supervisory skills and the basic sciences. Both the certificate and degree students will have spent considerable time in laboratory and clinical training.

Admission to the Pharmacy Technology program requires a separate application procedure.

Students are encouraged to meet with an advisor or counselor.

Students seeking admission to the Pharmacy Technology program must have completed the following basic requirements before receiving an application:

- High School diploma or GED
- Admission to Pima Community College
- Reading assessment test score at the level of, or completion of REA 112
- Math assessment test at the level of MAT 122 or higher, or completion of MAT 092 with a grade of "C" or better

## General Requirements

- Total required credits for the certificate: 37-38 credit hours  
PHT coursework: 31 credit hours  
Other coursework including General Education: 6-7 credit hours
- Total required credits for the AAS Degree: 70 credit hours  
PHT coursework: 34 credit hours  
Other coursework including General Education: 36 credit hours

## Restrictions

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program department chairperson.

## Minimal Grade Achievement

- Students must receive a grade of "C" or better in all core courses to progress to the next semester.

## Pharmacy Technology—Certificate for Direct Employment

Program Identification Code: CRTPHARMTECH

### Required Courses (37 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
PHT 170	Introduction to Pharmacy Technology	2	
PHT 171	Pharmaceutical Calculations	3	
PHT 172	Drug Therapy I	4	
PHT 174	Pharmacy Operations	3	*
PHT 178	Pharmacy Microcomputers	3	
PHT 180	Sterile Products	4	PHT 174
PHT 181	Interprofessional Relations in Pharmacy	2	*
PHT 182	Drug Therapy II	4	
PHT 190	Pharmacy Technician Internship	4	*
PHT 193	Clinical Seminar	2	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 3  
WRT 101

**Analysis and Critical Thinking** 3

Choose 3 credit hours from the mathematics, or science.

**Mathematics**  
MAT 122 or 151

**Science**  
BIO 100 or 181

### Suggested Course Sequence

See a pharmacy technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.



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

Program Identification Code: AASPHARMTECH

### Required Courses (71 Credit Hours)

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

PHT 170	Introduction to Pharmacy Technology	2	
PHT 171	Pharmaceutical Calculations	3	
PHT 172	Drug Therapy I	4	
PHT 174	Pharmacy Operations	3	*
PHT 178	Pharmacy Microcomputers	3	
PHT 180	Sterile Products	4	PHT 174
PHT 181	Interprofessional Relations in Pharmacy	2	*
PHT 182	Drug Therapy II	4	
PHT 189	Pharmacy Technician Administration	3	*
PHT 193	Clinical Seminar	2	*
PHT 194	Pharmacy Technician Internship	4	*

#### Support Courses

BIO 100	Biology Concepts		*
or 181	General Biology (Majors) I	4	
CHM 130	Fundamental Chemistry		
or 151	General Chemistry I	5	*
CHM 140	Fundamental Organic and Biochemistry		*
or 152	General Chemistry II	5	CHM 151
SPE 120	Business and Professional Communication	3	

#### General Education Requirements

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

WRT 101 and 102

**Analysis and Critical Thinking** 6

**Mathematics**

MAT 151

**Science**

BIO 105 or 182

### Global Awareness

6

(This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.)

### **Humanities and Fine Arts**

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

(Any course in this category meets the cultural diversity requirement.)

### Computer Literacy

0-3

(This requirement may be met by either course work or by competency attained through or determined by the program.)

CSA 173, 174, 175

### **Suggested Course Sequence**

See a pharmacy technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Physics

Program Identification Code: AOSSCIENCE

A student planning on obtaining a physics degree should follow the Associate of Science Degree for Transfer. A student seeking a degree must take the math, writing, and reading assessment exams. The student should then meet with a physics faculty advisor or counselor to plan courses. The student who plans on transferring to an upper division school to complete his/her degree should also contact an advisor from their chosen school for verification of transfer courses.

# Political Science

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 in Liberal Arts may be recognized by some employers for entry level positions.

Students planning to transfer to the University of Arizona, Arizona State University, or Northern Arizona University should see an advisor or counselor for requirements unique to each school. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

## Political Science—Associate of Arts Degree for Transfer

Program Identification Code: AOAPOLITLSCI

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

## Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

POS 100	Introduction to Politics	3
POS 110	American Natl Government and Politics	3
POS 120	Intro to International Relations	3
POS 140	Introduction to Comparative Politics	3
POS 160	Introduction to Political Ideas	3

## Support Courses

### Second Language Requirement 4-16

Completion of a language course numbered 211, fourth-semester level, or completion of SPA 202 or SLG 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.

### Electives 3-7

Complete 3-7 transferable electives from the Political Science transfer guide, prerequisite courses for your major or general education courses, or any transferable courses.

### Arizona General Education Curriculum (AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGEC-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGEC, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

**English Composition** 6

**Humanities and Fine Arts** 6

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 9

(Core courses, POS 100 and 110, fulfill this requirement. Complete one additional non-POS course from this list.)

**Other Requirement Options** 3

(The second language course required fulfills this requirement. This requirement is completed.)

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C) (POS 120 fulfills this requirement. This requirement is completed.)
3. Global diversity (G) (The second language course required fulfills this requirement. This requirement is completed.)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course list of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

#### Suggested Course Sequence

See a political science advisor or counselor.

## Pre-Agriculture

Program Identification Code: AOALIBRALART

Students interested in the area of Agriculture should follow the Associate of Arts Degree for Transfer in Liberal Arts and consult the catalog of the school to which they plan to apply. Students should also see the pre-agriculture advisor or counselor at the school they plan to attend.

## Pre-Architecture

### Pre-Architecture Certificate for Transfer

Program Identification Code: CRTPREARCHIT

#### Required Courses (30 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
PHY 121	Introductory Physics I	5	*
MAT 151	College Algebra	4	*
MAT 182	Trigonometry	3	*

#### Support Courses

WRT 102	Writing II		*
or 108	Writing II for International Students	3	WRT 107

Humanities Electives 6  
(Complete 2 courses from the Transfer General Education (AGEC) course lists for AA, ABUS, and AS Degrees in the Humanities and Fine Arts categorical requirements.)

Social and Behavioral Sciences Electives 6  
(Complete 2 courses from the Transfer General Education (AGEC) course lists for AA, ABUS, and AS Degrees in the Social and Behavioral Sciences categorical requirements.)

General Education Courses 6  
(See AGEC requirements for transfer.)

### **Architecture Electives**

ARCH 112, 114, and 118 are pre-professional courses at the University of Arizona which should be taken concurrently with the above courses at Pima Community College. See a pre-architecture faculty advisor or counselor for additional information.

### **Suggested Course Sequence**

See a building and construction technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Pre-Dental**

Program Identification Code: AOALIBRALART

Students interested in the area of Dentistry should follow the Associate of Science Degree for Transfer and consult the catalog of the school to which they plan to apply. Students should also see the pre-dental advisor or counselor at the school they plan to attend.

## **Pre-Law**

Program Identification Code: AOALIBRALART

Students interested in the area of Law should follow the Liberal Arts Associate of Arts Degree for Transfer in Liberal Arts and consult the catalog of the school to which they plan to apply. Students should also see the pre-law advisor or counselor at the school they plan to attend.

## **Pre-Medical**

Program Identification Code: AOALIBRALART

Students interested in the area of Medicine should follow the Associate of Science Degree for Transfer and consult the catalog of the school to which they plan to apply. Students should also see the pre-medical advisor or counselor at the school they plan to attend.

## **Pre-Pharmacy**

Program Identification Code: AOALIBRALART

Students interested in the area of Pharmacy should follow the Associate of Science Degree for Transfer and consult the catalog of the school to which they plan to apply. Students should also see the pre-pharmacy advisor or counselor at the school they plan to attend.

## **Pre-Veterinary**

Program Identification Code: AOALIBRALART

Students interested in the area of Veterinary Medicine should follow the Associate of Science Degree for Transfer and consult the catalog of the school to which they plan to apply. Students should also see the pre-veterinary advisor or counselor at the school they plan to attend.

## **Psychology**

Program Identification Code: AOALIBRALART

A student planning on obtaining a degree in Psychology should follow the Associate of Arts Degree for Transfer in Liberal Arts.

See an advisor or counselor and complete a program of study form using the Transfer Guide.

# Public Administration

The Public Administration Degree program for transfer prepares students for a university Bachelor's degree program in Public Administration. Public Administration includes the following major fields of interest: Public Management, Health Services Administration, Criminal Justice Administration and Human Services Administration. Students interested in the latter two fields should consult administration of justice and social services faculty advisor or counselors. Pre-law students are encouraged to major in public administration. Skill development in human relations, statistics, decision-making, and policy analysis is emphasized throughout the program.

This program has been primarily designed for transfer to the University of Arizona; however, this degree will apply to Public Administration at all other state universities, including Arizona State University, Northern Arizona University, and the University of Phoenix. Those wishing to transfer to the Business and Public Administration College at the University of Arizona should place heavy emphasis on mathematics. Verification of transfer courses should be established with the transfer university and college. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section. Students should check with program advisor or counselors (located on the West Campus) for further information.

New students are required to take the math assessment test which is administered during registration. The prerequisite for MAT 172 and 212 is MAT 151 or satisfactory score on mathematics assessment.

## Public Administration—Associate of Business Administration (ABUS) Degree for Transfer

Program Identification Code: AOBPUBLADMIN

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

The public administration degree program for transfer prepares students for a university Bachelor's degree program in public administration.

This degree fulfills lower-division general education and major requirements for the Bachelor of Science degree in Public Administration at the University

of Arizona and in Business Administration at University of Phoenix, Arizona State University, Northern Arizona University, and the University of Arizona. It may also transfer into public administration or business programs at other universities. See your business advisor or counselor.

### Required Courses (63 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

ACC 101	Financial Accounting	3	
ACC 173	Introduction to Fund Accounting	3	ACC 101
BUS 205	Statistical Methods in Economics and Business I	3	*
CSC 100	Introduction to Computers and Information Systems	3	*
ECN 201	Microeconomic Principles	3	MAT 092
ECN 202	Macroeconomic Principles	3	MAT 092
MAT 151	College Algebra	3	*
MAT 172	Finite Mathematics	3	MAT 151
MAT 212	Topics in Calculus	3	MAT 151
PAD 105	Introduction to Public Administration	3	
PAD 204	Introduction to the Analysis of Data for Decision Making	3	

### Support Courses

Please complete both requirements:

Ethics Requirement	3
PHI 101 or 130	Introduction to Philosophy Introductory Studies in Ethics and Social Philosophy
International and Multicultural Requirement:	
GEO 103	Cultural Geography
POS 120	Introduction to International Relations

### Arizona General Education Curriculum (AGEC-B) Requirements

(See General Education section of this catalog for Transfer General Education course list.)

By completing the general education portion of this degree (AGEC-B), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-B is also applicable to the University of

Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECE categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 6

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGECE Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Core course, MAT 212, fulfills this requirement. This requirement is completed.)

**Social and Behavioral Sciences** 6

(Core course, ECN 201, and support course, POS 120, fulfill this requirement. This requirement is completed.)

**Other Requirement Options** 6

(Core courses, MAT 151 and 172, fulfill this requirement. This requirement is completed.)

**AGECE Special Requirements** \*

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the

categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See an advisor or counselor.

\*For additional prerequisite information, check course section.

## 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 Criminal Justice, and the Fire Science Associate of Applied Science Degree to ASU's East Campus, Bachelor of Applied Science Degree in Fire Service Management. Both ASU's (East Campus) and NAU's 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 and 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, mutual trust and mutual benefit. We work together to make effective use of the talent, facilities and resources possessed by each partner.

Public Safety & Emergency Services Institute  
6680 S. Country Club, Tucson, Arizona 85709-1700  
Telephone: (520) 206-2662  
Fax: (520) 206-2736  
Dr. Barbara Ganz, Dean

## Administration of Justice Studies

The Administration of Justice Studies program is designed to serve three types of students:

- Pre-service - for students wishing to secure employment in the criminal justice system
- In-service - the professional who needs to increase his/her skills for their present duties
- Transfer - for students wishing to transfer to a four-year school and pursue a Bachelors degree in an area of justice studies (Please see information below.)

The Associate of Applied Science degree for direct employment offers a broad range of skills training. This program is designed to provide the basic courses needed to seek employment or promotion in corrections and/or criminal justice. Students are urged to seek the help of an administration of justice faculty advisor or counselor before and during enrollment in the program.

The Associate of Arts degree is specifically designed for students who are planning to transfer to Northern Arizona University or Western New Mexico University. Those students who plan to transfer to Arizona State University or the University of Arizona or another four-year institution should consult with a faculty advisor or counselor and follow the transfer guide of the college they wish to attend. Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor.

## Administration of Justice Studies—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASADMINJUST

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

AJS 101	Introduction to Administration of Justice Systems	3	
AJS 109	Criminal Law	3	
AJS 115	Criminal Procedures	3	
AJS 123	Corrections as a System	3	
AJS 201	Rules of Evidence	3	
AJS 210	Police Community and Human Relations	3	
AJS 212	Juvenile Justice Procedures	3	
AJS 225	Crime and Delinquency	3	
AJS 246	Issues of Race and Ethnicity in the Administration of Justice	3	
AJS 290	Administration of Justice Field Experience	3	*

### Support Courses

POS 110	American National Government and Politics	3	
POS 130	American State and Local Governments and Politics	3	
PSY 101	Introduction to Psychology	4	
SPE 120	Business and Professional Communication	3	
WRT 150 or 154	Practical Communications Career Communications	3	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6  
WRT 101 and 102

**Analysis and Critical Thinking** 6

**Mathematics**  
This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.  
MAT 100 level or higher (except MAT 198)  
TEC 113

**Science**  
Any AGECE categorical requirement from the Biological/Physical Science List

**Critical Thinking**  
PHI 120

**Global Awareness** 6  
This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

**Humanities and Fine Arts**  
Any AGECE categorical requirement from the Art list  
Any AGECE categorical requirement from the Humanities/Historical Perspective list  
Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language  
Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**  
SOC 101

**Computer Literacy** 0-3  
This requirement may be met by either course work or by competency attained through or determined by the program.  
CSA 173, 174, 175

**Suggested Course Sequence**  
See an administration of justice faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Administration of Justice Studies—Associate of Arts Degree for Transfer

Program Identification Code: AOAADMINJUST

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor or counselor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (62-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

AJS 101	Introduction to Administration of Justice Systems	3
AJS 109	Criminal Law	3
AJS 115	Criminal Procedures	3
AJS 123	Corrections as a System	3
AJS 201	Rules of Evidence	3
AJS 210	Police Community and Human Rel.	3
AJS 212	Juvenile Justice Procedures	3
AJS 225	Crime and Delinquency	3
AJS 246	Issues of Race and Ethnicity in the Administration of Justice	3

### Arizona General Education Curriculum (AGECE-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGECE-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete the AGECE, all 35 credits, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

<b>English Composition</b>	6
<b>Humanities and Fine Arts</b>	6-9
(Complete at least one course from the ART LIST and at least one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses that also fulfill the I, C, and G AGEC Special Requirements.)	
<b>Biological and Physical Sciences</b>	8
<b>Mathematics</b>	3
(Complete MAT 142 or higher.)	
<b>Social and Behavioral Sciences</b>	6-9
(Complete courses from at least two prefixes. It is also best to select courses that fulfill the I, C, and G AGEC Special Requirements.)	
<b>Other Requirement Options</b>	0-6
<b>AGEC Special Requirements</b>	*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See an administration of justice faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Corrections Training Academy

### Corrections Training Academy—Certificate for Direct Employment

(See contractual programs listed in the back of the catalog.)

## Emergency Medical Technology

This program provides the theoretical and practical preparation to qualify graduates for the certificate for the Emergency Medical Technician (EMT-B). Students who wish to continue their studies in emergency medicine should review the Associate of Applied Science degree in Paramedicine.

Clinical experience requirements for all levels of Emergency Medical Technology require immunization records for the following immunizations:

- MMR Measles, Mumps, Rubella
- TD Tetanus, Diphtheria (within the last seven years)
- TB Tuberculosis screening indicating negative activity (within six months of beginning the program)
- HBV Hepatitis B vaccination series (HBV is encouraged for students who will be working as a healthcare provider, but is not required and can be declined)

Students entering the Basic Emergency Medical Technology class must also meet the following requirements:

- Must be 18 years of age at the start of the class.
- Possess CPR Certification at the Healthcare Provider Level with at least 1 year left in the certification period. CPR certification meeting these requirements is available at Pima Community College.
- Must provide proof of personal medical insurance to participate in clinical experience. Student health insurance is available through Pima Community College Student Services.
- Read at the 9th grade level through College assessment (contact Assessment Center).
- Students must meet with an advisor on the East Campus to complete a pre-enrollment worksheet prior to enrolling in the EMT-B Certificate.

Students must meet with an advisor on the East Campus to complete a pre-enrollment worksheet prior to enrolling in the EMT-B program.

Certification testing requires additional fees to the National Registry of Emergency Medical Technicians (NREMT) and the Southern Arizona EMS Council (SAEMS). Students with felony convictions should consult with the Arizona Department of Health Services to verify eligibility for certification.

## Emergency Medical Technology—Certificate for Direct Employment

Program Identification Code: CRTEMEDTEC-B

### EMT-B Certificate

This EMT-B course is approved by the Arizona Department of Health Services, Bureau of Emergency Medical Services and by the National Registry of Emergency Medical Technicians. Students who complete the program will be issued a certificate by Pima Community College. Upon successful completion of the program, the graduate is eligible to take the required state and National Registry of Emergency Medical Technicians examinations. Certification to work as an Emergency Medical Technician rests entirely with the Arizona Department of Health Services, Bureau of Emergency Medical Services. Requirements for entrance into the EMT program (see narrative) may also be found in Arizona Administrative Code, Title 9, Chapter 25, Article 308 (A) (B) (C) (D).

#### Acceptance Into the Program:

Completion of college admission requirements.

#### Required Course (9 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
EMT 100	Basic Emergency Medical Technology	9	*

## Emergency Medical Technology—Paramedic Certificate for Direct Employment

Program Identification Code: CRTPARAMEDIC

The paramedic certificate program increases the knowledge and skill of the EMT-B graduate 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. This certificate requires six credit hours of general education course work.

The program is approved by the Arizona Department of Health Services, Bureau of Emergency Medical Services and by the National Registry of Emergency Medical Technicians. Students who complete the program will be issued a certificate for direct employment by Pima Community College. Upon successful completion of the program the graduate is eligible to take the required State and National Registry of Emergency Medical Technicians examinations. Current Arizona Department of Health Services regulations allow program graduates to take the Arizona EMT-P examination and/or the National Registry of Emergency Medical Technicians examination. Certification to work as an Emergency Medical Technician rests entirely with the Arizona Department of Health Services, Bureau of Emergency Medical Services. Requirements for entrance into the EMT program (see narrative) may also be found in Arizona Administrative Code, Title 9, Chapter 25, Article 308 (A) (B) (C) (D).

#### Acceptance into the Program:

- Completion of college admission requirements.
- Completion of acceptance criteria as established by the Arizona Department of Health Services and Pima Community College.
- Program size is limited to 20 students by State of Arizona regulations.

#### Required Courses (56 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
All of the core courses require acceptance into the Advanced Paramedic Program.			
EMT 170	Extrication/Rescue Techniques	1	*
EMT 201	Pre-Hospital Environment	3	*
EMT 202	Paramedic Preparation	3	*
EMT 203	Advanced Airway Management	2	*
EMT 204	Shock and Fluid Therapy	1	*
EMT 205	Advanced Life Support Pharmacology	2	*
EMT 206	Pathophysiology of Traumatic Injuries I	2	*
EMT 207	Pathophysiology of Traumatic Injuries II	1	*
EMT 208	Advanced Life Support Medical Emergencies I: Respiratory	2	*
EMT 209	Advanced Life Support Medical Emergencies II: Cardiovascular	4	*

EMT 210	Advanced Life Support Medical Emergencies III: Endocrine, Nervous System, Acute Abdomen, and Anaphylaxis	2	*
EMT 211	Advanced Life Support Medical Emergency IV: Toxicology, Infectious Diseases, Environmental Injuries, and Geriatrics	2	*
EMT 212	Pathophysiology and Management of Gynecological, Obstetrical, and Neonatal Emergencies	2	*
EMT 213	Pathophysiology and Management of the Pediatric Patient	2	*
EMT 214	Emotional Aspects of Illness and Injury	1	*
EMT 215	Paramedic Practicum: Clinical	3	*
EMT 216	Paramedic Practicum: Vehicular	5	*
EMT 230	Emergency Cardiac Care	3	*
EMT 232	Pediatric Advanced Life Support	1	*
EMT 240	Trauma Management	2	*
EMT 295	Independent Research in Emergency Medical Technology	2	*

#### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication 3

WRT 101

#### Analysis and Critical Thinking 3

Choose 3 credit hours from the mathematics, or science course lists.

#### Mathematics

MAT 100 level or higher (except MAT 198)

TEC 113

#### Science

BIO 100, 103, 156, 160

CHM 121, 130

#### Suggested Course Sequence

See an emergency medical technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Emergency Medical Technology—Paramedic—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASPARAMEDIC

The Associate of Applied Science program increases the knowledge and skill of the EMT-B graduate 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. The Associate of Applied Science Degree requires eighteen hours of general education course work.

The program is approved by the Arizona Department of Health Services, Bureau of Emergency Medical Services and by the National Registry of Emergency Medical Technicians. Students who complete the program will be issued an Associate of Applied Science degree by Pima Community College. Upon successful completion of the program, the graduate is eligible to take the required State and National Registry of Emergency Medical Technicians examinations. Current Arizona Department of Health Services regulations allow program graduates to take the Arizona EMT-P examination and/or the National Registry of Emergency Medical Technicians examination. Certification to work as an emergency medical technician rests entirely with the Arizona Department of Health Services, Bureau of Emergency Medical Services. Requirements for entrance into the EMT program (see narrative) may also be found in Arizona Administrative Code, Title 9, Chapter 25, Article 308 (A) (B) (C) (D).

#### Acceptance into the program:

- Completion of college admission requirements.
- Completion of acceptance criteria as established by the Arizona Department of Health Services and Pima Community College.
- Program size is limited to 20 students by State of Arizona regulation.

#### Required Courses (65 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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#### Core Courses

All of the core courses require acceptance into the Advanced Paramedic Program.

EMT 170	Extrication/Rescue Techniques	1	*
EMT 201	Pre-Hospital Environment	3	*
EMT 202	Paramedic Preparation	3	*
EMT 203	Advanced Airway Management	2	*
EMT 204	Shock and Fluid Therapy	1	*

EMT 205	Advanced Life Support Pharmacology	2	*
EMT 206	Pathophysiology of Traumatic Injuries I	2	*
EMT 207	Pathophysiology of Traumatic Injuries II	1	*
EMT 208	Advanced Life Support Medical Emergencies I: Respiratory	2	*
EMT 209	Advanced Life Support Medical Emergencies II: Cardiovascular	4	*
EMT 210	Advanced Life Support Medical Emergencies III: Endocrine, Nervous System, Acute Abdomen, and Anaphylaxis	2	*
EMT 211	Advanced Life Support Medical Emergency IV: Toxicology, Infectious Diseases, Environmental Injuries, and Geriatrics	2	*
EMT 212	Pathophysiology and Management of Gynecological, Obstetrical, and Neonatal Emergencies	2	*
EMT 213	Pathophysiology and Management of the Pediatric Patient	2	*
EMT 214	Emotional Aspects of Illness and Injury	1	*
EMT 215	Paramedic Practicum: Clinical	3	*
EMT 216	Paramedic Practicum: Vehicular	5	*
EMT 230	Emergency Cardiac Care	3	*
EMT 232	Pediatric Advanced Life Support	1	*
EMT 240	Trauma Management	2	*
EMT 295	Independent Research in Emergency Medical Technology	2	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 6

WRT 101 and 102 or WRT 107 and 108

### Analysis and Critical Thinking 6

### Mathematics

This requirement must be met by course work or by

assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

### Science

BIO 100, 105, 156, 160

CHM 121, 130

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECECategorical requirements lists.

### Humanities and Fine Arts

Any AGECECategorical requirement from the Art list

Any AGECECategorical requirement from the Humanities/Historical Perspective list

Any AGECECategorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECECategorical requirement from the Social/Behavioral Sciences list

Any AGECECategorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See an emergency medical technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.



# Fire Science

This program emphasizes professional firefighting skills related to the everyday demands of the profession, management of situations, and coping with change and challenge in the field. The program is designed both for professionals already serving as firefighters and as a preparatory program for those who seek firefighting as a career. It also prepares the student to move toward managerial and command positions.

## Program Prerequisite 1:

EMT 100 Basic Emergency Medical Technology 9 credits

## Program Prerequisite 2:

- A. Successful completion of a recognized firefighting academy.  
or  
B. Completion of 12 credit hours of course work with a grade of "C" or better in each of the following courses:

FSC 149	Fire Operations I	3 credits
FSC 150	Fire Operations II	3 credits
FSC 151	Introduction to Fire Science	3 credits
FSC 167	Rescue Practices and First Aid	3 credits

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

Program Identification Code: AASFIRESCIEN

## Required Courses (62 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

Completion of a firefighting academy program or program prerequisites (see narrative above). 12

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

FSC 152	Fundamentals of Fire Prevention	3	
FSC 153	Hazardous Materials I	3	
FSC 154	Advanced Fire Prevention	3	*
FSC 160	Wildland Firefighting	2	
FSC 162	Hydraulics and Fire Suppression	3	*
FSC 163	Fire Apparatus and Equipment	3	*
FSC 164	Fire Protection Systems	3	FSC 162
FSC 165	Building Construction for Fire Protection	3	

FSC 166	Fire Suppression, Strategy and Tactics	3	FSC 149
FSC 175	Introduction to Fire Investigation: Origin and Recognition of Arson	3	
FSC 189	Issues in Firefighting	1	

## Support Courses

HDE 170	Dynamics of Leadership	2
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## General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

WRT 101 and 102 or WRT 107 and 108

**Analysis and Critical Thinking** 6

## Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in science. MAT 100 level or higher (except MAT 198) (MAT 151 is recommended for students planning to transfer to ASU's BAS degree)

## Science

Any AGECE categorical requirement from the Biological/Physical Science List - CHM 130 preferred (CHM 130 is recommended for students planning to transfer to ASU's BAS degree)

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

## Humanities and Fine Arts

Any AGECE categorical requirement from the Art list  
Any AGECE categorical requirement from the Humanities/Historical Perspective list  
Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language



Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

SOC 201 (c)

### **Computer Literacy**

0-3

(This requirement may be met by either course work or by competency attained through or determined by the program.)

CSA 173, 174, 175

### **Suggested Course Sequence**

See a fire science faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Law Enforcement Related Instruction**

The law enforcement programs consist of skills which are basic to several law enforcement and public safety careers, commissioned law enforcement officer training, and supervision skills. They are all identified by the LEN prefix.

The available program options include:

- Law Enforcement Careers—Certificate for Direct Employment  
*This certificate program is open to the general public.*
- Law Enforcement—Certificate for Direct Employment  
*Students must be employed by an agency before being admitted to this program. Completion of the program meets and exceeds the minimum P.O.S.T. requirements for entry-level employment as a peace officer.*
- Law Enforcement Supervision—Certificate for Direct Employment  
*Students must be certified law enforcement officers or receive special permission prior to admittance into this program.*
- Law Enforcement—Associate of Applied Science Degree for Direct Employment  
*Students must have completed the Law Enforcement Certificate to be admitted into this program.*

Admission to the Law Enforcement Basic Certificate program requires employment and sponsorship of a public or private law enforcement agency. Students seeking admission to this certificate program must have completed the following basic requirements before they can begin the program:

- High school diploma or GED
- At least 18 years of age
- 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
- Other requirements that are specific to each law enforcement agency

## Law Enforcement Careers—Certificate for Direct Employment

Program Identification Code: CRTLAWCAREER

### Required Courses (16-19 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
LEN 100	Careers in Law Enforcement	3	
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	

### Support Course

WRT 150	Practical Communications	3	*
Elective			
Select one course in consultation with a law enforcement advisor or counselor		1-4	

### Suggested Course Sequence

See a law enforcement program advisor or counselor.

\* For additional prerequisite information, check course section.

## Law Enforcement—Certificate for Direct Employment

(Courses in this certificate are often restricted. Please see Law Enforcement program narrative for more information.)

### Required Courses (33 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
LEN 120	Introduction to Law Enforcement	1	*
LEN 125	Law and Legal Matters I	3	*
LEN 126	Law and Legal Matters II	3	LEN 125
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	2	*
LEN 205	Police Proficiency Skills I	3	*
LEN 206	Police Proficiency Skills II	3	LEN 205
LEN 207	Police Proficiency Skills III	3	LEN 206
LEN 208	Police Proficiency Skills IV	3	LEN 207

### Suggested Course Sequence

See a law enforcement program advisor or counselor.

\* For additional prerequisite information, check course section.

## Law Enforcement-Supervision—Certificate for Direct Employment

(Courses in this certificate are often restricted. Please see Law Enforcement program narrative for more information.)

### Required Courses (19 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
LEN 270	Principles of Law Enforcement Supervision	3	*
LEN 271	Skills for Community-Oriented Policing	4	*
LEN 274	Supervision of Community-Oriented Policing I	3	*
LEN 275	Supervision of Community-Oriented Policing II	3	*
LEN 290	Law Enforcement Field Experience	3	*

### Support Course

CSC 105	Survey of Microcomputer Uses	3
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### Suggested Course Sequence

See a law enforcement program advisor or counselor.

\*For additional prerequisite information, check course section.

## Law Enforcement-Associate of Applied Science Degree for Direct Employment

(Courses in this certificate are often restricted. Please see Law Enforcement program narrative for more information.)

### Required Courses (60 Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

LEN 120	Introduction to Law Enforcement	1	*
LEN 125	Law and Legal Matters I	3	*
LEN 126	Law and Legal Matters II	3	LEN 125
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	2	*
LEN 205	Police Proficiency Skills I	3	*
LEN 206	Police Proficiency Skills II	3	LEN 205
LEN 207	Police Proficiency Skills III	3	LEN 206
LEN 208	Police Proficiency Skills IV	3	LEN 207

### Support Courses

LEN 100	Careers in Law Enforcement	3
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

OR

Select 12 credits at the 100 level or higher after consulting with a law enforcement advisor or counselor.

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

6

SPE 102 and WRT 154

SPE 120 and WRT 154

WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route to Northern Arizona University.

### Analysis and Critical Thinking

6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

MAT 151 is recommended for those students who choose the transfer route to Northern Arizona University.

#### Science

Any AGECE categorical requirement from the Biological/Physical Science List

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

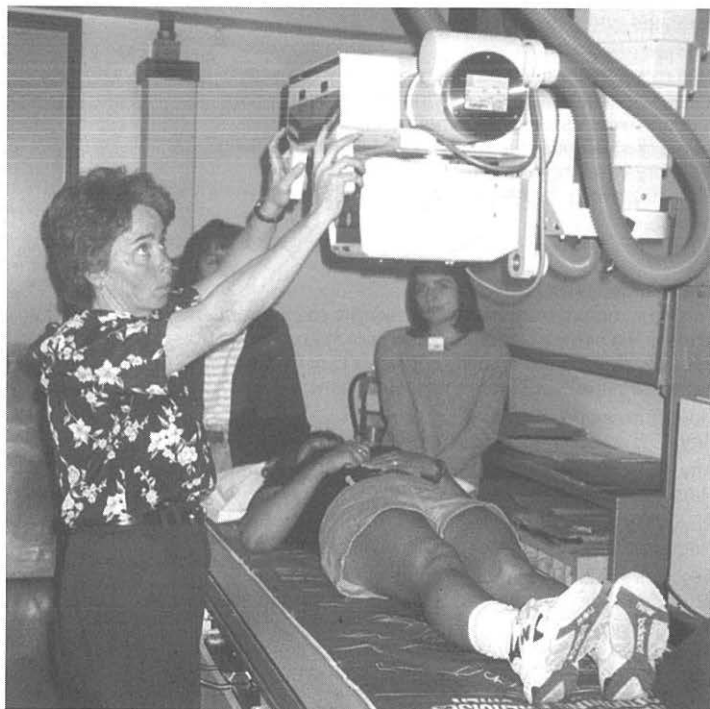
Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list



### **Leadership and Ethics**

HDE 170

(Any course in this category meets the cultural diversity requirement.)

### **Computer Literacy**

0-3

(This requirement may be met by either course work or by competency attained through or determined by the program.)

CSA 173, 174, 175

### **Suggested Course Sequence**

See a law enforcement program advisor or counselor.

\*For additional prerequisite information, check course section.

## **Public Safety Communications**

This program is designed to prepare a student to seek employment in the field of Public Safety Communications. Emergency dispatchers work in 9-1-1 centers, police, fire, ambulance services, local, state, federal government and private agencies. Dispatchers partner with law enforcement, fire, and medical services by receiving telephone calls from persons needing emergency assistance, and dispatching the appropriate aid by using up-to-date technology. This occupation requires the ability to handle large amounts of stress and remain calm under difficult conditions.

The available program options include:

- Public Safety Communications Certificate for Direct Employment
- Public Safety Communications—Associate of Applied Science for Direct Employment

### **Public Safety Communications—Certificate for Direct Employment**

Program Identification Code: CRTSAFETYCOM

#### **Required Courses (39 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ASC 111A	Computer Keyboarding and Document Production: Keyboard	1	
EMT 110	First Responder	3	
HDE 130	Stress Management	2	
PSC 120	Public Safety Communications I	3	
PSC 121	Public Safety Communications II	3	
PSC 130	Communication Center Operations I	3	
PSC 131	Communication Center Operations II	3	
PSC 190	Field Experience	2	
PSC 199	Cooperative Education Experience	6	
SPA 103	Beginning Conversation I	4	
SSE 242	Crisis Intervention, Theory and Techniques	3	

#### **General Education**

#### **Communication**

3

WRT 154

**Analysis and Critical Thinking**

3

**Science**

BIO 156

**Suggested Course Sequence**

See a Public Safety Communications advisor or counselor.

**Public Safety Communications—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASSAFETYCOM

**Required Courses (64 Credit Hours)**

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

PSC 120	Public Safety Communications I	3	
PSC 121	Public Safety Communications II	3	*
PSC 130	Communication Center Operations I	3	
PSC 131	Communication Center Operations II	3	*
PSC 190	Field Experience	2	*
PSC 199	Coop Related Class in PSC	2	*
PSC 199	Coop Work in PSC	4	

**Support Courses**

ASC 111A	Computer Keyboarding and Document Production: Keyboard	1	
CSC 105	Survey of Microcomputer Uses	3	
EMT 110	First Responder	3	
HDE 130	Stress Management	2	
FSC 151	Introduction to Fire Science	3	
FSC 153	Hazardous Materials I	3	
LEN 120	Introduction to Law Enforcement	3	*
MAN 122	Supervision	3	
SSE 242	Crisis Intervention, Theory and Techniques	3	*

**General Education Courses****Communication**

6

SPE 120 and WRT 154

**Analysis and Critical Thinking**

6

**Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in science. MAT 100 level or higher (except MAT 198)

**Science**

BIO 156

**Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

**Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

SOC 120

**Computer Literacy**

0-3

(This requirement may be met by either course work or by competency attained through or determined by the program.)

CSA 173, 174, 175

**Suggested Course Sequence**

See a public safety communications advisor or counselor.

\*For additional prerequisite information, check course section.



# Radiologic Technology

Radiologic technology is a health sciences program that prepares the student for a career in diagnostic medical imaging. The Associate of Applied Science Degree program enables students to become certified radiologic technologists after successfully completing the medical radiography examination of the American Registry of Radiologic Technologists. The certified technologist has several career alternatives: direct employment in hospitals, clinics, and private doctors' offices or, with additional training, specialization in other medical imaging modalities or radiation therapy. Graduates may transfer to a university that offers a Bachelor of Science degree program in the field.

Admission to the Radiologic Technology program requires a separate application procedure.

Students are encouraged to meet with a radiologic technology program advisor or counselor.

Students seeking admission to the Radiologic Technology program must have either completed or be currently enrolled during the Fall semester in the following basic requirements before receiving an application:

- High School diploma or GED
- Admission to Pima Community College
- Reading assessment test score at the level of, or completion of REA 112
- Math assessment test at the level of MAT 151 or higher, or completion of MAT 122 with a grade of "C" or higher
- BIO 201 within the last eight years
- BIO 202 within the last eight years

## General Requirements

- Total required credits: 70 credit hours
- RAD coursework: 52 credit hours
- Other coursework including General Education courses: 18 credit hours

## Restrictions

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program director.

## Minimal Grade Achievement

- Students must receive a grade of "C" or better in all core courses to progress to the next semester.

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

### Required Courses (70 Credit Hours) plus prerequisite courses.

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Satisfied by program prerequisite.

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

RAD 170	Medical Imaging Fundamentals	3	*
RAD 171	Radiographic Positioning I	4	*
RAD 172	Medical Imaging Technology I	4	RAD 170
RAD 173	Clinical Education I	2	*
RAD 174	Radiographic Positioning II	4	*
RAD 175	Medical Imaging Technology II	4	*
RAD 176	Clinical Education II	4	*
RAD 177	Clinical Education III	6	*
RAD 181	Radiographic Positioning III	4	*
RAD 182	Medical Imaging Technology III	4	*
RAD 183	Clinical Education IV	4	*
RAD 184	Radiographic Positioning IV	4	*
RAD 185	Clinical Seminar	1	*
RAD 186	Clinical Education V	4	*

## General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

WRT 101 and 102

**Analysis and Critical Thinking** 6

## Mathematics

Program prerequisites may satisfy this requirement.

## Science

Program prerequisites and support courses may satisfy this requirement.

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a radiologic technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Real Estate

The real estate program is designed to fulfill industry needs in the Tucson area. There are two options in real estate sales/brokerage: a certificate and a two-year Associate of Applied Science Degree for Direct Employment.

### Real Estate Sales/Brokerage

This real estate option is designed to prepare persons to handle the sales of private residences, apartment buildings, industrial and commercial property and unimproved land. Students also are trained in finance, appraising, communications, and small business management. Training in real estate is offered through a one-semester basic certificate and through a two-year Associate of Applied Science degree program.

The certificate program, intended for the selling agent, qualifies students to take the state licensing exam. The State requires candidates for the sales license to have six credit hours (ninety clock hours) of real estate education which can be met by taking RLS 105, or RLS 101 and RLS 202, or RLS 101 and RLS 205.

The two-year program provides for additional growth, development and specialization in the real estate field. The real estate degree and certificate programs are job oriented. Persons interested in a four-year degree should follow the first two-year course requirements of the university they plan to attend.

### Real Estate Sales/Brokerage—Certificate for Direct Employment

Program Identification Code: CRTREALESTAT

#### Required Courses (15 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
RLS 105	Principles of Real Estate/License Preparation		
or	101	Introduction to Real Estate Principles	
and	202	Real Estate Appraisal	
or	101	Introduction to Real Estate Principles	
and	205	Real Estate Finance	
or			
FIN 205	Real Estate Finance	6	
<b>Support Courses</b>			
BUS 200	Business Law I	3	
CSC 105	Survey of Microcomputer Uses	3	
WRT 150	Practical Communications	3	

#### Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Real Estate Sales/Brokerage—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASREALESTAT

### Required Courses (60-63 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

BUS 200	Business Law I	3	
MKT 113	Professional Sales	3	
RLS 101	Introduction to Real Estate Principles		
or 105	Principles of Real Estate/License Preparation	3-6	
RLS 202	Real Estate Appraisals	3	
RLS 205	Real Estate Finance	3	
RLS 252	Advanced Appraisal Techniques	3	

### Support Courses

ACC 101	Financial Accounting	3	
ACC 102	Managerial Accounting	3	*
BUS 151	Mathematics of Business	3	
CSC 105	Survey of Microcomputer Uses	3	
ECN 201	Microeconomic Principles	3	MAT 092
MAN 110	Human Relations in Business and Industry	3	
MAN 124	Small Business Management	3	
ELEC	Real Estate Electives	6	

(Complete two courses at the 100 level or higher from the following areas:

BUS, ECN, FIN, MAN, MKT)

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

6

SPE 120 or WRT 154

### Analysis and Critical Thinking

6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the analysis and critical thinking category.

MAT 100 level or higher (except MAT 198)

#### Science

Any AGECE categorical requirement from the Biological/Physical Science List

#### Critical Thinking

PHI 120

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

ECN 202

### Computer Literacy

0-3

(This requirement may be met by either course work or by competency attained through or determined by the program.)

CSA 173, 174, 175

### Suggested Course Sequence

See a real estate faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Recreation and Tourism Management

## Recreation and Tourism Management—Associate of Arts Degree for Transfer

Program Identification Code: AOARECTOUR

There are two specialty areas within this degree - Recreation and Tourism. This program is designed to transfer into Recreation and Tourism Management at Arizona State University-West. It may transfer to other universities as well. See a recreation or tourism advisor.

Recreation specialty provides a broad understanding of opportunities within recreation departments, with an emphasis on the value of field-based learning. Tourism specialty provides an understanding of opportunities within the travel and tourism field. Recreation is the second-largest industry in the United States. Employment opportunities include, but are not limited to, the following areas: city, county, district and state park and recreation departments; hospitals, nonprofit community-based agencies; commercial recreation agencies; resort and tourist agencies; youth, teen, adult and senior citizens recreation; outdoor programs; fitness facilities; private membership clubs and camps.

Students entering the Recreation specialty area must possess a CPR certification, courses for this requirement are available at Pima Community College. See a recreation advisor.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts and Associate of Science degree transferability to regional universities, please refer to the chart in the front of this section. For a course to transfer, a grade of C or better is required.

### Required Courses (62 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

REC/TVL 120	Leisure and Society	3	
REC/TVL 210	Leisure Delivery Systems	3	*
REC/TVL 250	Leadership in Recreation and Tourism	3	
REC/TVL 290	Field Work	3	*

Choose one of the following specialty areas:  
Department Chair/program advisor approval is recommended in the selection of the specialty areas:

### Recreation

REC 283	Customer Service and Program Planning	3
ECE 130	School-Aged Child Care and Program Development	3
SSE 132	Aging: Health and Physiology	3

### Electives

See recreation advisor.

### Tourism Management

TVL 101	Introduction to the Travel Industry	3	
TVL 102	Computerized Reservation Systems I	3	*
TVL 205	Tourism Marketing	3	TVL 101
TVL 214	Destination Development	3	*
HOS 211	Hospitality Sales and Marketing Application I	3	*

### Arizona General Education Curriculum

#### (AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor.

If a student does not complete all 35 credits of the AGECA, lower-division general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

### English Composition 6

### Humanities and Fine Arts 6-9

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL

PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 6-9

(Select courses with at least two prefixes from this list that also fulfill the I, C, and G AGEC Special Requirements.)

**Other Requirement Options** 0-6

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a recreation advisor.

\*For additional prerequisite information, check course section.

## Reserve Officers Training Corps (ROTC)

ROTC is offered to students at Pima Community College (PCC) by the three military departments, Military Aerospace Studies (Air Force), Military Science (Army), and Naval Science (Navy), at the University of Arizona. Although students enroll in their ROTC classes at Pima, classes are held on the University of Arizona campus. Students are under no military obligation during their first two years in the program. Interested students are encouraged to contact the appropriate military department prior to enrolling in classes.

Upon entering one of the three programs as a cadet or midshipman, ROTC will provide the student with the necessary course materials and uniforms. These items remain the property of ROTC and must be returned when leaving, or graduating from the program.

Students who complete the first two years of the program at PCC and continue their ROTC training at a four-year institution may receive tax-free subsistence pay of \$100 per month during their junior and senior years at four-year colleges. For further information, students need to contact the ROTC at the University of Arizona.

### Air Force ROTC—Certificate

Program Identification Code: CTRAIRFROTC

#### Required Courses (8 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
MLA 100A	Air Force Today I	2	
MLA 100B	Air Force Today II	2	
MLA 200A	History of Air Power I	2	
MLA 200B	History of Air Power II	2	

#### Suggested Course Sequence (Read down.)

MLA 100A  
MLA 100B  
MLA 200A  
MLA 200B

## Army ROTC—Certificate

Program Identification Code: CRTARMYROTC

### Required Courses (12 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
MLS 100	Introduction to Leadership	3	
MLS 101	Leadership Principles	3	
MLS 200	Army Composition/Function and Leadership Development I	3	
MLS 201	Army Composition/Function and Leadership Development II	3	

### Suggested Course Sequence (Read down.)

MLS 100  
MLS 101  
MLS 200  
MLS 201

## Navy ROTC—Certificate

Program Identification Code: CRTNAVYROTC

### Required Courses (13 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
NSP 100	Naval Laboratory I	1	
NSP 101	Introduction to Naval Science	2	
NSP 102	Naval Ship Systems I: Engineering	3	
NSP 200	Naval Laboratory II	1	
NSP 201	Naval Ship Systems II: Weapons	3	
NSP 202	Sea Power and Maritime Affairs	3	

### Suggested Course Sequence (Read down.)

NSP 100  
NSP 101  
NSP 200  
NSP 201  
NSP 202

## Respiratory Therapist

The Respiratory Therapist program gives the theory and practice to prepare students for jobs as respiratory therapists. It also prepares the student for transfer into four-year programs.

Respiratory care is a allied health specialty which deals with the assessment, treatment, management and care of patients with deficiencies and abnormalities associated with respiration and circulation. The Respiratory Therapist program trains students in the therapeutic use of medical gases and their administering devices, environmental control, humidity and aerosol therapy, inhaled medications, chest physiotherapy, airway management, mechanical ventilator management, rehabilitation, home care, and cardiopulmonary resuscitation. Students also learn a variety of techniques used in the diagnosis, monitoring and assessment of patients with cardiopulmonary disorders. Following a physician's orders, respiratory care personnel must work closely with other members of the health care team including physicians, nurses, rehabilitation therapists and other health technologists.

The Associate degree program consists of five semesters of professional (RTH) and support courses. Students, who are accepted into the program and complete all required courses will be scheduled to enter the hospital portion of their program beginning with the second semester. Graduates of the Respiratory Therapist program will receive an Associate of Applied Science degree in respiratory care.

Following completion of this Council on Accreditation of Allied Health Programs (CAAHEP) approved program, the graduate is qualified for immediate employment and for application to the National Board for Respiratory Care (NBRC) for the entry-level certification exam to attain the status of a certified respiratory therapy technician (CRTT) required for state licensure in the state of Arizona. He or she may also apply for entry into a baccalaureate program. Upon successful completion of the entry-level examination the graduate is then eligible for the advanced practitioner examinations offered through the NBRC to attain the status of a Registered Respiratory Therapist (RRT). The respiratory therapist usually works in hospitals, special-care facilities, long-term care facilities, home care or rehabilitation. Employment also exists within commercial companies in sales or within contract service agencies. The registered therapist may choose to work strictly as a clinician or in other areas such as management, medical research or education in the hospital, college or university setting.

Admission to the Respiratory Therapist program requires a separate application procedure.

Students are encouraged to meet with an advisor or counselor.

Students seeking admission to the Respiratory Therapist program must have completed the following basic requirements before receiving an application:



- High School Diploma or GED
- Admission to Pima Community College
- Reading assessment test score at the level of, or completion of REA 112
- MAT 122 with a grade of "C" or better
- BIO 160 with a grade of "C" or better
- CHM 130 with a grade of "C" or better
- WRT 101 with a grade of "C" or better

#### General Requirements

- Total required credits: 72 credit hours
- RTH coursework: 54 credit hours
- Other courses including General Education courses: 18 credit hours

#### Restrictions

- Correspondence and extension study from an accredited institution is limited and subject to approval by the program coordinator and department chairperson.

#### Minimal Grade Achievement

- Students must receive a grade of "C" or better in all core courses to progress to the next semester.

## Respiratory Care—Associate of Applied Science Degree for Direct Employment

### Required Courses (73 Credit Hours) plus prerequisite courses.

Course Number	Course Title	Credit Hours	Prerequisites
RTH 110	Introduction to Respiratory Care	4	*
RTH 112	Respiratory Physiology	4	*
RTH 121	Basic Therapeutics in Respiratory Care	5	*
RTH 123	Basic Assessment and Monitoring	4	*
RTH 124	Pharmacology for Respiratory Care	3	*
RTH 125	Clinical Procedures I	1	*
RTH 135	Clinical Procedures II	4	*
RTH 241	Critical Care Therapeutics	5	*
RTH 243	Advanced Assessment and Monitoring	4	*
RTH 245	Clinical Procedures III	4	*
RTH 246	Cardiorespiratory Disorders I	3	*
RTH 251	Advanced and Specialty Therapeutics	5	*

RTH 255	Clinical Procedures IV	4	*
RTH 256	Cardiorespiratory Disorders II	3	*
RTH 257	Clinical Applications and Professional Development	1	*

#### Support Course

BIO 205	Microbiology	4	*
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#### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication 6

WRT 101 satisfied by program prerequisite  
WRT 102

#### Analysis and Critical Thinking 6

Prerequisites and support courses satisfy this requirement.

#### Global Awareness 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

PSY 101

#### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See a respiratory therapist program advisor or counselor.

\*For additional prerequisite information, check course section.

## **Social Services**

The Social Services program prepares students for employment in many community service agencies and lays the foundation for continuing education in the helping professions. The skill and knowledge base will qualify the student for entry-level employment in mental health, substance abuse treatment, domestic violence intervention, gerontology, eating disorders, child care, retardation counseling, welfare delivery, community outreach, client advocacy and other service oriented positions. This program prepares students to pursue studies in social work, rehabilitation, child development and family relations, psychology, sociology, counseling and other disciplines offered at four-year universities.

There are two degree programs available: a two-year Associate of Applied Science (AAS) for direct employment and a two-year Associate of Arts Degree for Transfer (AA) to a university. Students are strongly recommended to see a Social Service faculty advisor or counselor and obtain a transfer guide if they plan to transfer to a four-year college or university.

The Social Service Associate degree programs develop skills and knowledge for working with clients, conducting interviews, collecting data, making home visits, working as a team member, determining treatment actions, performing outreach and advocacy and acting as a link between the professional caregiver and the client. In addition, the skill/knowledge base includes identification of community resources, recognizing power bases in the community, application of models for social change and utilization of resources in serving clients.

The substance abuse specialty degrees add a skill and knowledge base which emphasizes treatment modes, including the physiological and psychological effects of drugs and alcohol, current legislation and legal aspects of the drug situation, case management and other topics important to substance abuse rehabilitation.

The gerontology specialty degrees add a skill and knowledge base which emphasizes the special needs the elderly present in social service settings, social issues created by an aging population, special health problems of the elderly and treatment alternatives in the field of gerontology.

The youth services specialty degrees add a skill and knowledge base which emphasizes the normal development needs of children and adolescents, the causes and consequences of delinquency, dependency, and other problems unique to youth, the special care and treatment needs of youth in out-of-home placements (foster care, group homes, shelters, residential treatment, detention facilities, etc.), and the need to mobilize community resources to support youth in healthy communities and prevent delinquency, dependency, teen pregnancy, substance addiction, teenage suicide, HIV/AIDS, youth gangs, and other problems of youth.

In addition to the Associate degree programs, four certificates are offered, which are designed as a second major for students in other Associate degree programs or as skill building for those individuals who are already employed in industry, business and human services. While this course work is not necessarily intended to qualify individuals for employment, as does the Associate degree, it will enhance understanding of social welfare, substance abuse, eating disorders, and domestic violence issues. Those interested in pursuing one of these certificates are encouraged to consider an associate degree appropriate to their interests.

The certificate in Social Services provides core skills for and understanding of social welfare, agencies, groups and those in need on a one-to-one basis.

The certificate in substance abuse provides core understanding of drug and alcohol use, abuse, treatment modalities and political/legal aspects of substance abuse in society.

The certificate in domestic violence intervention provides core understanding of the causes and cures of domestic violence, crisis intervention and alternative treatment methods to this problem which crosses racial, economic and social boundaries.

The certificate in eating disorders provides core understanding of the symptoms, causes, and treatment modalities of this problem in both youth and adults. Those seeking an Associate degree must fulfill minimum general education requirements set by Pima Community College to graduate. A grade of "D" in a core course or in the SSE elective requirement will not fulfill graduation requirements for an Associate degree or certificate in Social Services. Students applying for graduation in an Associate degree program must demonstrate competency in reading.

The Social Services Field Experience (SSE 190) is required for those seeking the Associate of Applied Science degree in Social Services or the Social Services Substance Abuse Specialty. SSE 191, Field Placement Gerontology I, and SSE 291, Field Placement Gerontology II, are required

for those seeking the Social Services Gerontology Specialty Associate of Applied Science degree. The Associate of Arts Degree for Transfer in Liberal Arts in the Social Services Gerontology Specialty requires completing only SSE 191, Field Placement Gerontology I. In these courses, the student performs a minimum of 240 hours of supervised work in a helping setting relevant to his/her career interests. While it is highly recommended for all students in Social Services, it is not required for those seeking a certificate or an Associate of Arts Degree for Transfer.

Students who plan to transfer to a four-year college or university can meet the first and second year general education requirements at Pima Community College but must check the requirements of the school they plan to attend. All Social Services majors are strongly urged to talk with a Social Services faculty advisor or counselor about the best way to schedule classes.

## Social Services—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASSOCIALSRV

### Required Courses (61 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
SSE 110	Introduction to Social Welfare	3	
SSE 111	Group Work	3	
SSE 112	Casework Methods I	3	
SSE 190	Social Services Field Experience	4	*
SSE 210	Community Organization and Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112

### Support Courses

SSE ELEC	May be fulfilled by taking an SSE course which is not listed as a core course.	3
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### Electives

(Please see an advisor to select appropriate course work.)

18

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

6

WRT 101 and 102

#### Analysis and Critical Thinking

6

#### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### Science

Any AGECE categorical requirement from the Biological/Physical Science List

#### Critical Thinking

PHI 120

#### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list.

## Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

## Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

## Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Social Services—Associate of Arts Degree for Transfer

Program Identification Code: AOASOCIALSRV

Verification of transfer courses should be established with the transfer university or college, or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

## Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**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 112	Casework Methods I	3	
SSE 210	Community Organization/Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112

## Support Courses

Electives	May be fulfilled by taking an SSE course which is not listed as a core course. SSE 290 is highly recommended.	10-14
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## Arizona General Education Curriculum

### (AGEC-A) Requirements

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGECA, lower-division general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

### English Composition

6

### Humanities and Fine Arts

6-9

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGECA Special Requirements.)

### Biological and Physical Sciences

8

### Mathematics

3

(Complete MAT 142 or higher.)

### Social and Behavioral Sciences

6-9

(The core course, SSE 110, satisfies this requirement. Select an additional course from this list. It is best to select a course from this list that also fulfills the I, C, and G AGECA Special Requirements.)

### Other Requirement Options

0-6

### AGECA Special Requirements

\*

A student is required to fulfill each of the following AGECA Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\*Optional. Recommended but not required. May be used to fulfill SSE elective requirement.

## Social Services Gerontology Specialty—Associate of Applied Science Degree for Direct Employment Program Identification Code: AASGRNTLGYS

### Required Courses (61 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

SOC 166	Social Gerontology I		
or PSY 220	The Psychology of Death and Loss	3	*
SSE 110	Introduction to Social Welfare	3	
SSE 111	Group Work	3	
SSE 112	Casework Methods I	3	
SSE 130	Gerontology: Casework Practice	3	*
SSE 132	Aging: Health and Physiology	3	
SSE 191	Field Placement Gerontology I	4	*
SSE 210	Community Organization and Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112
SSE 291	Field Placement Gerontology II	3	SSE 191

### Support Courses

Electives 9  
(Please see an advisor to select appropriate course work.)

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

WRT 101 and 102

**Analysis and Critical Thinking** 6

### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science List

### Critical Thinking

PHI 120

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

## Social and Behavioral Sciences

Any AGECECategorical requirement from the Social/Behavioral Sciences list

Any AGECECategorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

## Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

## Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

## Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Social Services Gerontology Specialty—Associate of Arts Degree for Transfer

Program Identification Code: AOAGRNTLGYS

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer in Liberal Arts and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

## Required Courses (63-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

SOC 166	Social Gerontology I		
or PSY 220	The Psychology of Death and Loss	3	PSY 100A*
SSE 110	Introduction to Social Welfare	3	
SSE 111	Group Work	3	

SSE 112	Casework Methods I	3	
SSE 130	Gerontology: Casework Practice	3	SSE 112*
SSE 132	Aging: Health and Physiology	3	SSE 130*
SSE 191	Field Placement Gerontology I	4	SSE 110*
SSE 210	Community Organization and Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112

## Arizona General Education Curriculum (AGEC-A) Requirements

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGECE, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECECategorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

<b>English Composition</b>	6
<b>Humanities and Fine Arts</b>	6-9
(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGECEC Special Requirements.)	
<b>Biological and Physical Sciences</b>	8
<b>Mathematics</b>	3
(Complete MAT 142 or higher.)	
<b>Social and Behavioral Sciences</b>	6-9
(The core course, SSE 110, satisfies this requirement. Select an additional course from this list. It is best to select a course from this list that also fulfills the I, C, and G AGECEC Special Requirements.)	



### Other Requirement Options

0-6

### AGEC Special Requirements

\*

A student is required to fulfill each of the following AGECE Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECE Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Social Services Substance Abuse Specialty— Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASSUBSTABUS

### Required Courses (61 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**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 112	Casework Methods I	3	
SSE 120	Drugs in American Society	3	
SSE 122	Introduction to Alcohol Abuse	3	
SSE 190	Social Services Field Experience	4	*

SSE 210	Community Organization/Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112
SSE 220	Treatment of the Substance Abuser	3	*
SSE 222	Political and Legal Aspects of Drug Use	3	*

### Support Courses

Electives 9  
(Please see an advisor to select appropriate course work.)

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

WRT 101 and 102

**Analysis and Critical Thinking** 6

### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

### Science

Any AGECE categorical requirement from the Biological/Physical Science List

### Critical Thinking

PHI 120

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language  
Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### **Social and Behavioral Sciences**

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### **Suggested Course Sequence**

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Social Services Substance Abuse Specialty— Associate of Arts Degree for Transfer**

Program Identification Code: AOASUBSTABUS

Verification of transfer courses should be established with the transfer university or college, or with a Pima Community College counselor or faculty advisor or counselor. For additional information on Associate of Arts Degree for Transfer and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

### **Required Courses (62-64 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**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 112	Casework Methods I	3	
SSE 120	Drugs in American Society	3	
SSE 122	Introduction to Alcohol Abuse	3	
SSE 210	Community Organization/Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112
SSE 220	Treatment of the Substance Abuser	3	*
SSE 222	Political/Legal Aspects of Drug Use	3	*

### **Support Courses**

SSE 190	Social Services Field Experience	**	*
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### **Arizona General Education Curriculum (AGEC-A) Requirements**

35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECE-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGECE, lower-division general education is not fulfilled at all Arizona public universities. When the AGECE is not completed, the credits will be evaluated by the university on a

course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

**English Composition** 6

**Humanities and Fine Arts** 6-9

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 6-9

(The core course, SSE 110, satisfies this requirement. Select an additional course from this list. It is best to select a course from this list that also fulfills the I, C, and G AGEC Special Requirements.)

**Other Requirement Options** 0-6

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

### Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\* Optional. Recommended but not required.

## Social Services Youth Services Specialty—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASYOUTHSERV

### Required Courses (61 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**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 112	Casework Methods I	3	
SSE 146	Child Abuse Intervention and Protection	3	
SSE 160	Introduction to Youth Services	3	
SSE 210	Community Organization and Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 260	Youth Services: Policy, Practice and Prevention	3	SSE 160
SSE 290	Field Experience Youth Services	4	*

### Support Courses

Electives	9
(Please see an advisor to select appropriate course work.)	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the [1998/1999 Catalog](#) for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	6
WRT 101 and 102	

<b>Analysis and Critical Thinking</b>	6
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### Mathematics

This requirement must be met by course work or by assessment of competency at the 100 level or higher.

Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### **Science**

Any AGEC categorical requirement from the Biological/Physical Science List

#### **Critical Thinking**

PHI 120

#### **Global Awareness**

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

#### **Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### **Social and Behavioral Sciences**

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### **Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

#### **Computer Literacy**

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

#### **Suggested Course Sequence**

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Social Services Youth Services Specialty—Associate of Arts Degree for Transfer**

Program Identification Code: AOAYOUTHSERV

Verification of transfer courses should be established with the transfer university or college, or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

### **Required Courses (62-64 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

**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 112	Casework Methods I	3	
SSE 146	Child Abuse Intervention and Protection	3	
SSE 160	Introduction to Youth Services	3	
SSE 210	Community Organization and Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 260	Youth Services: Policy, Practice and Prevention	3	SSE 160

### **Support Courses**

SSE 290	Field Experience Youth Services	**	*
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### **Arizona General Education Curriculum**

**(AGEC-A) Requirements** 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGEC-A is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGEC, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 6-9

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 6-9

(The core course, SSE 110, satisfies this requirement. Select an additional course from this list. It is best to select a course from this list that also fulfills the I, C, and G AGEC Special Requirements.)

**Other Requirement Options** 0-6

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

## Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

\*\*Optional. Recommended but not required.

## Basic Social Services—Certificate

Program Identification Code: CRTSOCIALSERV

### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
SSE 110	Introduction to Social Welfare	3	
SSE 111	Group Work	3	
SSE 112	Casework Methods I	3	
SSE 210	Community Organization and Development	3	SSE 110
SSE 211	Group Technique Applications	3	SSE 111
SSE 212	Casework Methods II	3	SSE 112

## Suggested Course Sequence

See a social services faculty advisor or counselor.

## Basic Social Services Substance Abuse Certificate

Program Identification Code: CRTSUBSTABUS

### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
SSE 110	Introduction to Social Welfare	3	
SSE 112	Casework Methods I	3	
SSE 120	Drugs in American Society	3	
SSE 122	Introduction to Alcohol Abuse	3	
SSE 220	Treatment of the Substance Abuser	3	*
SSE 222	Political and Legal Aspects of Drug Use	3	*

## Suggested Course Sequence

See a social services faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Basic Social Services Domestic Violence Intervention—Certificate

Program Identification Code: CRTDOMESVIOL

### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
SOC 127	Marriage and the Family	3	
SSE 110	Introduction to Social Welfare	3	
SSE 112	Casework Methods I	3	
SSE 140	Domestic Violence: Causes and Cures	3	
SSE 146	Child Abuse Intervention and Protection	3	
SSE 242	Crisis Intervention, Theory and Techniques	3	*

### Suggested Course Sequence

See a social services faculty advisor or counselor.

## Basic Social Services Eating Disorders Certificate

Program Identification Code: CRTEATINGDIS

### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
SSE 110	Introduction to Social Welfare	3	
SSE 112	Casework Methods I	3	
SSE 150	Introduction to Eating Disorders	3	
SSE 151	Treatment Modalities for Eating Disorders	3	
SSE 152	Medical Aspects of Eating Disorders	3	
SSE 154	Nutrition	3	

### Suggested Course Sequence

See a social services faculty advisor or counselor.

## Sociology

### Sociology—Associate of Arts Degree for Transfer

Program Identification Code: AOASOCIOLOGY

The Associate of Arts Degree for Transfer in Sociology prepares the student to transfer to a four-year college or university and pursue a degree in sociology. After successfully completing this program students should be eligible to take upper division classes at a four-year institution. Students should consult the catalog for the institution to which they plan to transfer in order to establish the graduation and sociology major requirements and determine the transferability of Pima College courses.

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

SOC 101	Introduction to Sociology	3	
SOC 201	Minority Relations and Urban Society		
or 204	Women in Society	3	
Sociology Elective		3	
Select one course from the following:			
SOC 103	Explorations in Prejudice		SOC 101
SOC 120	Current United States Social Problems		SOC 101
SOC 127	Marriage and the Family		
SOC 166	Social Gerontology I		
SOC 203	Sociology of Utopia		

### Support Courses

#### Foreign Language Requirement

4-16

Completion of a language course numbered 211, fourth semester level, or completion of SPA 202 or SLG 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, addi-



tional credit hours of transferable electives must be completed to meet the minimum Associate degree requirement of 60 credit hours.

**Electives** 6-10

Complete 6-10 transferable credits using courses from the transfer guide, prerequisite courses to your major or general education courses, or any transferable courses.

**Arizona General Education Curriculum (AGEC-A) Requirements** 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer in Liberal Arts course list.)

Completion of the general education portion of this degree (AGEC-A) guarantees fulfillment of all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). It is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGEC, lower-division general education is not fulfilled at all Arizona public universities. When the AGEC is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGEC categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 9  
(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3  
(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 9

(Core courses, SOC 101 and 201, fulfill this requirement. Complete one additional non-SOC course from this list. See your advisor or counselor.)

**Other Requirement Options** 0  
(This requirement is completed.)

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

**Suggested Course Sequence**

See a sociology faculty advisor or counselor.

## Spanish

Program Identification Code: AOALIBRALART

A student planning on obtaining 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 complete a program of study form using the Transfer Guide.

## Speech Communication

The speech communication area offers an Associate of Arts Degree for Transfer in Liberal Arts which helps prepare students for careers requiring extensive interaction with the public: business, law, education, politics, pub-

lic relations, sales, and theology. The program develops and improves skills in public address, interpersonal communication and group communication in social and career settings.

Students in this program may also improve their communication skills by participating in forensic activities such as speaking before community audiences and competing in inter-collegiate speech tournaments. Through such activities, students may develop skills in debating; in persuasive, informative, extemporaneous and impromptu speaking; and in oral interpretation of literature and readers' theater. All students are welcome to participate in these activities regardless of previous speaking experience. Students are encouraged to take forensics during their first semester of study.

Students who plan to transfer to four-year institutions will find the speech communication program includes courses generally required of a major in the first four semesters of study. However, they should check the specific requirements of the institutions to which they plan to transfer.

All electives must be selected with the concurrence of a speech communication program advisor or counselor. Students should note that Voice and Diction is offered in the Fall Semester and Oral Interpretation of Literature is offered in the Spring Semester.

## Speech Communication—Associate of Arts Degree for Transfer

Program Identification Code: AOASPEECHCOM

Verification of transfer courses should be established with the transfer university or college, or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

SPE 105	Voice and Diction	2
SPE 110	Public Speaking	3
SPE 120	Business and Professional Communication	3

SPE 124	Argumentation	3
SPE 125	Forensics	1
SPE 130	Small Group Discussion	3
SPE 136	Oral Interpretation of Literature	3

### Support Courses

#### FOREIGN LANGUAGE REQUIREMENT 4-16

Completion of a Language course numbered 211, fourth-semester level, or completion of SPA 202 or SLG 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.**

ANT 102	Introduction to Cultural Anthropology and Linguistics	3
PSY 250	Introduction to Social Psychology	3 *

### Arizona General Education Curriculum

#### (AGEC-A) Requirements 35

(See General Education section of this catalog for Associate of Arts Degree for Transfer course list.)

By completing of the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGECA, lower-division general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

*See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.*

**English Composition** 6

**Humanities and Fine Arts** 6

(Select one course from the ART LIST and one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses

from this list that fulfill the I, C, and G AGEC Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 6

(Support courses, ANT 102 and PSY 250, fulfill this requirement. This requirement is completed.)

**Other Requirement Options** 6

(Core courses, SPE 110 and 130, fulfill this requirement. This requirement is completed.)

**AGEC Special Requirements** \*

A student is required to fulfill each of the following AGEC Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

(Support course, ANT 102, fulfills this requirement.

This requirement is completed.)

\*The student may fulfill the AGEC Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

#### **Suggested Course Sequence (Read down.)**

Reading requirement	ANT 102	PSY 250
English composition	SPE 105	Second language
SPE 110	English composition	Social and Behavioral
SPE 125	Foreign language	Sciences elective
Second language	Biological and	SPE 120
Mathematics elective	Physical Sciences	SPE 136
Humanities and Fine	elective	Humanities and Fine
Arts elective	SPE124	Arts elective
Biological and	SPE130	Second language
Physical Sciences	Humanities and Fine	
elective	Arts elective	

\*For additional prerequisite information, check course section.

## Technology

The following programs offer many opportunities for students seeking employment in the developing fields associated with emerging high-technology industries. Almost fifty percent of the courses (core courses) are common to each program. The common core helps the student who wishes to change from one specialty to another or to attain degrees in two or more specialties.

The Pima Community College Technology program (TEC) contains two certificates and five Associate of Applied Science (A.A.S.) degree programs for direct employment. The certificate programs are arranged so that the student wishing to continue for the Associate of Applied Science degree in one or more of the specialties can do so easily, requiring a minimum of additional courses.

In alignment with documented advice from employers, the Technology curriculum puts great emphasis on technical communications, testing and measurement, proper use of tools, statistical quality and experimentation, team problem solving, safety, reliability, general principles of technology, and the basic sciences that are appropriate for the specialty. Specialties include courses on electricity, electronics, electromechanics, electronic communications, and special manufacturing processes as needed. Mathematics (essentially without calculus) is applied throughout the program.

Students should plan to take assessment tests in reading, writing, mathematics, and technology prior to registering for these courses.

The available program options include:

- Technology (Certificate)

#### Manufacturing Technology

- Semiconductor and Electronics Manufacturing Technology (Associate of Applied Science)

#### Electronics Technology

- Electronics Technology (Associate of Applied Science)
- Electronic Telecommunications Technology (Associate of Applied Science)

#### Computer Systems Technology

- Microcomputer Technology (Certificate)
- Microcomputer Technology (Associate of Applied Science)
- Systems Networking Technology (Associate of Applied Science)

## Technology—Certificate for Direct Employment

Program Identification Code: CRTTECHNOLOGY

This program provides the common core plus one electronic telecommunications course of the Technology curriculum. Thus, the student wishing to continue for the Associate of Science degree in any of the technology specialties may do so with ease. This certificate will help prepare the student for limited entry level positions in a number of areas including electronic telecommunications, microcomputer technology, semiconductor manufacturing, systems networking, and electronics.

### Required Courses (36 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

TEC 121	Basic Electric and Magnetic Properties	4	*
TEC 122	Applied Semiconductor Devices	4	*
TEC 123	Digital Circuits and Applications	4	*
TEC 124	Modern Electronic Communications	4	*
TEC 125	AC Networks with Phasors	3	*
TEC 151	Information Transfer in Technology	2	
TEC 170	Foundations of Improvement Technology	3	*
TEC 171	Statistical Process Control and Experimentation	3	*

### Support Courses

SPE 120	Business and Professional Communications	3	
TEC 113	Mathematics with Trigonometry and Statistics	3	*
TEC 160	Microcomputers and Programming Techniques	3	*

### Suggested Course Sequence

See a technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Semiconductor and Electronics Manufacturing Technology—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASTECSEMCON

This program enables the student to prepare for employment in microchip fabrication and electronics industries. It contains the common core of the Technology curriculum and adds courses on optics, vacuum systems, fluidic devices and automated systems, power RF, semiconductor manufacturing processes. Students are encouraged to enroll in TEC 290 during their last semester in addition to courses listed below in this program.

### Required Courses (64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

TEC 103	Light and Optical Systems	1		TEC 113
TEC 121	Basic Electric and Magnetic Properties	4	*	
TEC 122	Applied Semiconductor Devices	4	*	
TEC 123	Digital Circuits and Applications	4	*	
TEC 125	AC Networks with Phasors	3	*	
TEC 151	Information Transfer in Technology	2		
TEC 170	Foundations of Improvement Technology	3	*	
TEC 171	Statistical Process Control and Experimentation	3	*	
TEC 221	Linear Devices	3	*	
TEC 222	Electromechanical Devices and Systems	4	*	
TEC 225	Fluid Devices and Automated Systems	3	*	
TEC 272	Semiconductor Manufacturing Processes I	3	*	
TEC 273	Semiconductor Manufacturing Processes II	3	*	
TEC 274	Vacuum Systems and Power RF	3	*	

### Support Course

TEC 160	Microcomputers and Programming Techniques	3	*
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### General Education Courses

Students may select the General Education Courses from the list below or

from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

SPE 120 and WRT 154

**Analysis and Critical Thinking** 6

**Mathematics**

TEC 113

**Science**

Any AGECEC categorical requirement in Physics from the Biological/Physical Science List

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECEC categorical requirements lists. Humanities and Fine Arts

Any AGECEC categorical requirement from the Art list

Any AGECEC categorical requirement from the Humanities/Historical Perspective list

Any AGECEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

**Social and Behavioral Sciences**

Any AGECEC Categorical requirement from the Social/Behavioral Sciences list

Any AGECEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

**Leadership and Ethics**

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy** 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

**Suggested Course Sequence**

See a science and technology faculty advisor.

\*For additional prerequisite information, check course section.

**Electronics Technology—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASTECELECTR

This program enables the student to prepare for employment in general electronics. Containing the common core courses of the Technology Curriculum, it allows the student to attain competencies along a broad range of topics including basic electricity, digital and analog devices and circuits, electronic communications, electronics construction and measurement, technical communications and team problem solving, statistical process control and experimentation, and electromechanical systems.

**Required Courses (72-73 Credit Hours)**

Course Number	Course Title	Credit Hours	Prerequisites
<b>Reading Requirement</b> - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.			
<b>Core Courses</b> - A grade of C or better is required for graduation.			
TEC 121	Basic Electric and Magnetic Properties	4	*
TEC 122	Applied Semiconductor Devices	4	*
TEC 123	Digital Circuits and Applications	4	*
TEC 124	Modern Electronic Communications	4	*
TEC 125	AC Networks with Phasors	3	*
TEC 126	Electronics Construction and Assembly	3	*
TEC 128	Electronics Measurements	3	*
TEC 151	Information Transfer in Technology	2	
TEC 170	Foundations of Improvement Technology	3	*
TEC 171	Statistical Process Control and Experimentation	3	*
TEC 221	Linear Devices	3	*
TEC 222	Electromechanical Devices and Systems	4	*
TEC 250	Digital Devices	4	*

TEC 251	Analog Circuits	4	*
ELEC	Select one course from the list below: TEC 103, 130, 182, 225, 227, 290	3-4	

### Support Course

TEC 160	Microcomputers and Programming Techniques	3	*
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	6
SPE 120 and WRT 154	

<b>Analysis and Critical Thinking</b>	6
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<b>Mathematics</b>	
TEC 113	

### Science

Any AGECE categorical requirement in Physics from the Biological/Physical Science List

<b>Global Awareness</b>	6
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This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

<b>Computer Literacy</b>	0-3
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This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Electronic Telecommunications Technology—Associate of Applied Science Degree for Direct Employment

Program Identification Code: AASTECTELCOM

This program enables the student, equipped with common core courses of the Technology curriculum to put major emphasis on electronic communications, particularly information transmission systems, RF and microwave devices, and integrated systems in telecommunications.

**It is recommended that students seeking immediate employment in this field take TEC 290 in addition to the program courses below. This course should be taken in the last semester of enrollment.**

### Required Courses (67 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

TEC 121	Basic Electric and Magnetic Properties	4	*
TEC 122	Applied Semiconductor Devices	4	*
TEC 123	Digital Circuits and Applications	4	*
TEC 124	Modern Electronic Communications	4	*
TEC 125	AC Networks with Phasors	3	*
TEC 151	Information Transfer in Technology	2	



TEC 170	Foundations of Improvement Technology	3	*
TEC 171	Statistical Process Control and Experimentation	3	*
TEC 221	Linear Devices	3	*
TEC 222	Electromechanical Devices and Systems	4	*
TEC 227	Communication and Information Transmission Systems	4	*
TEC 228	RF and Microwave Devices	4	*
TEC 229	Integrated Systems in Telecommunications	4	*

#### Support Course

TEC 160	Microcomputers and Programming Techniques	3	*
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#### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

**Communication** 6

SPE 120 and WRT 154

**Analysis and Critical Thinking** 6

**Mathematics**

TEC 113

**Science**

Any AGEC categorical requirement in Physics from the Biological/Physical Science List

**Global Awareness** 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

**Humanities and Fine Arts**

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

**Computer Literacy** 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

#### Suggested Course Sequence

See a technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

### Microcomputer Technology—Certificate for Direct Employment

Program Identification Code: CRTTECCOMPUT

This program provides the student with basic core courses that will couple nicely with the Microcomputer Technology Associate of Applied Science program and help prepare the student for limited entry level positions in some microcomputer arenas.

#### Required Courses (33 Credit Hours)

Course Number	Course/Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
TEC 121	Basic Electric and Magnetic Properties	4	*
TEC 123	Digital Circuits and Applications	4	*
TEC 125	AC Networks with Phasors	3	*
TEC 130	Microcomputer Assembly and Testing	4	*



TEC 132	Microcomputer Systems Servicing	4	*
TEC 151	Information Transfer in Technology	2	
TEC 170	Foundations of Improvement Technology	3	*

#### Support Course

TEC 160	Microcomputers and Programming Techniques	3	*
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#### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

<b>Communication</b>	3
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SPE 120

<b>Analysis and Critical Thinking</b>	3
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**Mathematics**

TEC 113

#### Suggested Course Sequence

See a technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

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

Program Identification Code: AASTECCOMPUT

This program enables the student, equipped with common core courses of the Technology curriculum, to put major emphasis on microcomputer assembly and testing, microcomputer systems servicing, microcomputer repair, and basic networking including dedicated server networks.

**It is recommended that students seeking immediate employment in this field take TEC 290 in addition to the program courses below. This course should be taken in the last semester of enrollment.**

#### Required Courses (68 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

TEC 121	Basic Electric and Magnetic Properties	4	*
TEC 122	Applied Semiconductor Devices	4	*
TEC 123	Digital Circuits and Applications	4	*
TEC 124	Modern Electronic Communications	4	*
TEC 125	AC Networks with Phasors	3	*
TEC 130	Microcomputer Assembly and Testing	4	*
TEC 132	Microcomputer Systems Servicing	4	*
TEC 151	Information Transfer in Technology	2	
TEC 170	Foundations of Improvement Technology	3	*
TEC 171	Statistical Process Control and Experimentation	3	*
TEC 230	Peer-to-Peer Networking	4	*
TEC 232	Dedicated Server Networks	4	TEC 132
TEC 234	Microcomputer Repair	4	*

#### Support Course

TEC 160	Microcomputers and Programming Techniques	3	*
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

#### Communication

SPE 120 and WRT 154

6

#### Analysis and Critical Thinking

##### Mathematics

TEC 113

6

##### Science

Any AGECE categorical requirement in Physics from the Biological/Physical Science List

#### Global Awareness

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

6

#### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

#### Suggested Course Sequence

See a technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## **Systems Networking Technology—Associate of Applied Science Degree for Direct Employment**

Program Identification Code: AASTECNETWRK

This program focuses on computer technology and the various means through which computers are networked to provide services. Including industry-driven common core courses of the Technology curriculum, it provides the student with additional information to achieve technical competencies in microcomputer assembly and testing, microcomputer systems servicing, dedicated server networks, networks of the Internet, networks and operating systems, and client server computing. Additional emphasis is placed on the important matter of remaining current and growing professionally in a rapidly changing technical environment.

**It is recommended that students seeking immediate employment in this field take TEC 290 in addition to the program courses below. This course should be taken in the last semester of enrollment.**

### Required Courses (76 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

TEC 121	Basic Electric and Magnetic Properties	4	*
TEC 122	Applied Semiconductor Devices	4	*
TEC 123	Digital Circuits and Applications	4	*
TEC 124	Modern Electronic Communications	4	*
TEC 125	AC Networks with Phasors	3	*
TEC 130	Microcomputer Assembly and Testing	4	*
TEC 132	Microcomputer Systems Servicing	4	*

TEC 151	Information Transfer in Technology	2	
TEC 170	Foundations of Improvement Technology	3	*
TEC 171	Statistical Process Control and Experimentation	3	*
TEC 230	Peer-to-Peer Networking	4	*
TEC 232	Dedicated Server Networks	4	TEC 230
TEC 235	Survey of Networks and Operating Systems	3	TEC 132
TEC 236	Underpinnings of the Internet	3	TEC 160
TEC 237	Contemporary Client/Server Computing	3	*
TEC 238	Information Acquisition and Professional Advancement	3	*

### Support Course

TEC 160	Microcomputers and Programming Techniques	3	*
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### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 3

SPE 120 and WRT 154

### Analysis and Critical Thinking 6

### Mathematics

TEC 113

### Science

Any AGECE categorical requirement in Physics from the Biological/Physical Science List.

### Global Awareness 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

CSA 173, 174, 175

### Suggested Course Sequence

See a technology faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Theater

The theater program, leading to an Associate of Arts Degree for Transfer, prepares students for transfer to a four-year college, leading to a Bachelor of Arts in Theater Production, Theater Education, or Theater Theory. This program provides extensive experience and training in performing and other areas of theater production.

### Theater—Associate of Arts Degree for Transfer

Program Identification Code: AOATHEATER

Verification of transfer courses should be established with the transfer university or college or with a Pima Community College counselor or faculty advisor. For additional information on Associate of Arts Degree for Transfer and Associate of Science Degree transferability to regional universities, please refer to the chart in the front of this section.

## Required Courses (61-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

THE 103	Voice and Movement for the Actor I	1	
THE 104	Voice and Movement for the Actor II	1	THE 103
THE 111	Stagecraft	2	
THE 112	Stagecraft Laboratory	1	*
THE 113	Stagecraft Crew	1	*
THE 115	Makeup	1	
THE 140	History of Theater I	3	
THE 141	History of Theater II	3	
THE 149	Introduction to Acting I	3	
THE 151	Introduction to Acting II	3	*
THE 220	Stage Lighting	2	*
THE 221	Stage Lighting Laboratory	1	*
THE 222	Stage Lighting Crew	1	*
THE 245	Principles of Dramatic Structure	3	*

**Electives** Complete one of the following options after consulting a theater department faculty advisor or counselor: 6

### Option 1:

THE 118	Basic Theater Graphics	2	
THE 223	Scene Design	2	THE 118*
THE 224	Scene Design Laboratory	1	THE 118*
THE 225	Scene Design Crew	1	THE 118*

### Option 2:

THE 250	Intermediate Acting I	3	THE 103*
THE 251	Intermediate Acting II	3	THE 104*

## Arizona General Education Curriculum

### (AGEC-A) Requirements

(See General Education section of this catalog for Associate of Arts Degree course list.)

By completing the general education portion of this degree (AGEC-A), the student will fulfill all lower-division general education requirements at the University of Arizona (UA), Arizona State University (ASU), and Northern Arizona University (NAU). The AGECA is also applicable to the University of Phoenix (UPHX) and may be applicable to other colleges and universities. See an advisor or counselor.

If a student does not complete all 35 credits of the AGECA, lower-division

general education is not fulfilled at all Arizona public universities. When the AGECA is not completed, the credits will be evaluated by the university on a course by course basis using the *Course Equivalency Guide* and applied depending on the degree and college.

See an advisor or counselor and complete courses in the following categories for a total of 35 credits. The courses listed under each of these AGECA categorical requirements are found in the General Education section of this catalog in the Transfer General Education List.

**English Composition** 6

**Humanities and Fine Arts** 6-9

(Complete at least one course from the ART LIST and at least one course from the HUMANITIES/HISTORICAL PERSPECTIVE LIST. It is best to select courses that also fulfill the I, C, and G AGECA Special Requirements.)

**Biological and Physical Sciences** 8

**Mathematics** 3

(Complete MAT 142 or higher.)

**Social and Behavioral Sciences** 9

(Core courses, THE 140 AND 141, satisfy 6 credits of this requirement. To satisfy the remaining 3 credits, complete a non-THE course from the list. It is also best to select courses that fulfill the I, C, and G AGECA Special Requirements.)

**Other Requirement Options** 0-3

(Complete one course from this list. It is also best to select courses that fulfill the I, C, and G AGECA Special Requirements.)

**AGECA Special Requirements** \*

A student is required to fulfill each of the following AGECA Special Requirements:

1. Intensive writing and critical inquiry (I)
2. Cultural diversity emphasizing ethnic, race, or gender awareness (C)
3. Global diversity (G)

\*The student may fulfill the AGECA Special Requirement by completing a course identified by an I, C, or G, respectively, in the Transfer General Education Course List of the General Education Section of this catalog. An individual course satisfying a categorical requirement listed above may also fulfill one or more Special Requirements. For example, LIT 266 fulfills the categorical requirement of Humanities and Fine Arts and two special requirements: intensive writing (I) and global diversity (G). This is called "double-dipping." If a student does not double-dip, additional credits beyond 35 may be required to complete general education.

## Suggested Course Sequence

See a theater department faculty advisor or counselor.

\*For additional prerequisite information, check course section.

# Translation Studies

The Translation Studies program is designed for individuals with proficiency in both Spanish and English who are interested in acquiring the skills to do accurate translation of written materials. Through a combination of theoretical classes and hands-on laboratory style practicums, students will gain experience in translating health care, legal, literary, and commercial materials and will have the option of selecting one of those fields for an internship. Program courses and advising are available at the Downtown Campus.

## Certificate entry requirements:

- WRT 102 - Writing II or WRT 108 - Writing II for International Students
- SPA 201 and 202 - Spanish for Native Speakers I and II or a proficiency test
- Demonstrate fifty percent (50%) competency in the translation of a document without aid

## Certificate Exit Requirement

- Demonstrate seventy-five percent (75%) competency in the translation of a document without aid.

## Translation Studies—Certificate for Direct Employment

Program Identification Code: CRTTRANSLATE

## Required Course (34 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
TRS 101	Introduction to Translation	4	
TRS 102	Spanish for Translation	4	
TRS 103	English for Translation	4	
TRS 120	Technology for Translation	4	*
TRS 150	Survey of Translation Specialty Areas	4	*
TRS 160	Translation in Specialty Areas	4	*
TRS 290	Practicum in Specialty Area Translation	4	*

## General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

## Communication

3

This requirement is satisfied by program entrance requirements.

## Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

## Mathematics

MAT 100 level or higher (except MAT 198)

TEC 113

## Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science list.

## Critical Thinking

PHI 120

## Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.



# Welding

This program is conducted in a building designed for welding instruction. Students are taught in classroom and lab areas like those found in industry.

Welding students may find cooperative education to be a way of gaining work experience while attending classes. See a Cooperative Education teacher-coordinator for details.

## Welding—Certificate for Direct Employment

Program Identification Code: CRTWELDING

### Required Courses (32 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

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

WLD 115	Blueprint Reading/Estimating	4	
WLD 119	Pattern Layout for Pipe Fabrication	3	*
WLD 150	Oxyacetylene Welding	4	
WLD 160	Arc Welding	4	
WLD 250	Pipe Welding	4	*

### Support Courses

MAC 103	Applied Shop Mathematics I	3	*
MAN 110	Human Relations in Business and Industry	3	

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 3

Choose 3 credit hours from the following list:

SPE 102 or WRT 154

WRT 101 or 107

### Analysis and Critical Thinking 3

### Science

MAC 275

### Suggested Course Sequence

See a welding faculty advisor or counselor.

\*For additional prerequisite information, check course section.



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

Program Identification Code: AASWELDING

### Required Courses (60 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
---------------	--------------	--------------	---------------

**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

WLD 115	Blueprint Reading/Estimating	4	
WLD 119	Pattern Layout for Pipe Fabrication	3	*
WLD 150	Oxyacetylene Welding	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	*

### Support Course

MAC 103	Applied Shop Mathematics I	3	*
MAC 104	Applied Shop Mathematics II	3	

Technical Electives 9  
Complete 9 credit hours from the following:  
ASC 111A, CAD 101, 152, CSC 105, MAC 110, 120, 250, PHY 101, WLD 162

### General Education Requirements

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 Catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication 6

SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* OR WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

### Analysis and Critical Thinking 6

#### Mathematics

This requirement must be met by course work or by

assessment of competency at the 100 level or higher. Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

#### Science

MAC 275

#### Critical Thinking

PHI 120

### Global Awareness 6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGEC categorical requirements lists.

#### Humanities and Fine Arts

Any AGEC categorical requirement from the Art list

Any AGEC categorical requirement from the Humanities/Historical Perspective list

Any AGEC categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at the 100 level or higher.

#### Social and Behavioral Sciences

Any AGEC Categorical requirement from the Social/Behavioral Sciences list

Any AGEC categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

#### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy 0-3

This requirement may be met by either course work or by competency attained through or determined by the program.

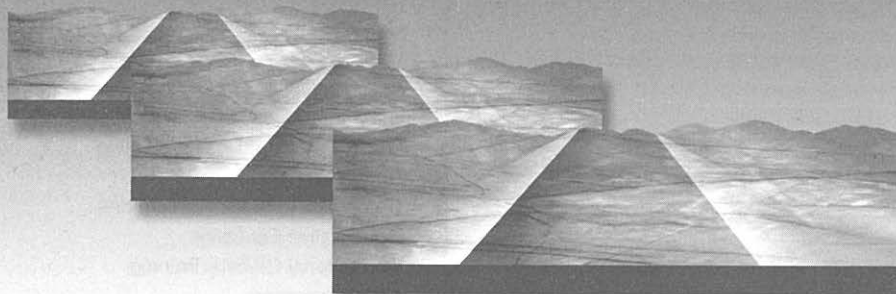
CSA 173, 174, 175

### Suggested Course Sequence

See a welding faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Educational Courses



## COURSE NUMBERING SYSTEM AND PREREQUISITES—COURSE PREFIXES

### 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.

Sample course listing:

ACC	101	Financial Accounting	3 cr. hrs.	3 periods
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.**

### LISTING OF COURSE PREFIXES

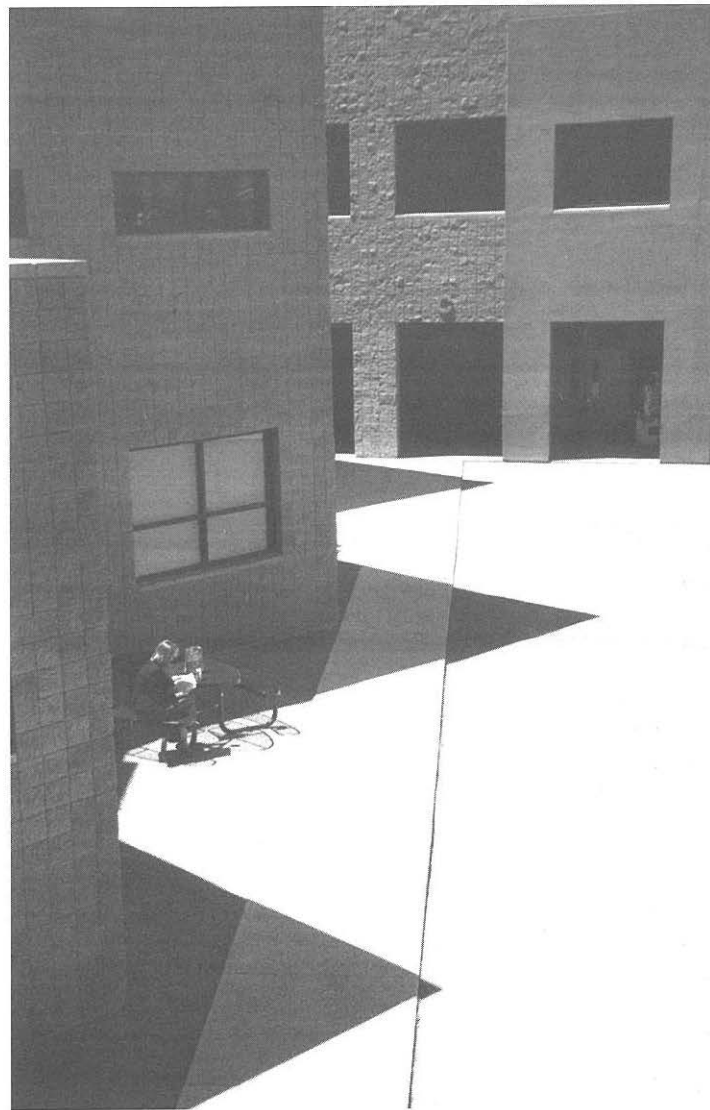
Accounting	ACC
Administration of Justice	AJS
Administrative Support Careers	ASC
American Indian Studies	AIS
Anthropology	ANT
Archaeology	ARC
Art	ART
Art for Personal Development	APD
Assembly Production	ASP
Astronomy	AST
Automotive Technology	AUT
Aviation Science	AVS
Aviation Technology	AVM
Biology	BIO
Building/Construction Technology	BCT
Business	BUS
Carpentry	CRP
Chemistry	CHM
Communication Graphics	CGR
Community Development Education	CDE
Computer Aided Design/Drafting	CAD
Computer Science	CSC
Computer Software Applications	CSA
Cooperative Education	CED
Correctional Officers Training	COT
Court Reporting	CRT
Court Support Services	CSS
Custodial Development	CUA
Dance	DNC
Dental Assisting	DAE
Dental Hygiene	DHE
Dental Laboratory Technology	DLT
Design	DES
Drafting	DFT
Early Childhood Education	ECE
Economics	ECN

Education	EDU	Landscape Technician	LTP
Electronic Apprenticeship Training	ELT	Latin	LAT
Emergency Medical Technology	EMT	Law Enforcement Related Instruction	LEN
Engineering	ENG	Legal Assistant	LAS
English as a Second Language	ESL	Legal Secretary	LSY
Environmental Technology	ENV	Library Skills	LIB
Equine Science	EQS	Literature	LIT
Experiential Education	EED	Machine Tool Apprentice	MTA
Exploratory	EXP	Machine Tool Technology	MAC
Fashion Design and Clothing	FDC	Maintenance Technology	MNT
Finance	FIN	Management	MAN
Fire Science	FSC	Marketing	MKT
Fitness and Recreation	FAR	Material Reclamation	MRE
Fitness and Sport Sciences	FSS	Mathematics	MAT
Food Science and Nutrition	FSN	Media Communication	MEC
Foundations for Personal Change	FPC	Music	MUS
French	FRE	Nursing	NRS
General Business	GEB	Nursing Assistant	NRA
Geography	GEO	Nursing Continuing Assistant	NCE
Geology	GLG	Pharmacy Technology	PHT
German	GER	Philosophy	PHI
Graphics and Image Technology (Offset Printing)	GRA	Physics	PHY
Health Care	HCA	Plumbing and Pipefitting	PFA
Health Continuing Education	HCE	Political Science	POS
Health Education	HED	Postal Service Management	PSM
History	HIS	Process Technology	PRO
Home Economics	HEC	Production Inventory Management	PIM
Honors	HON	Professional Development	PRD
Hospitality	HOS	Professional Flight Technology	PFT
Human Development Education	HDE	Psychology	PSY
Humanities	HUM	Public Administration	PAD
International Business Studies	IBS	Public Safety Communications	PSC
Institutional Foodservice	IFS	Quality Control Technology	QCT
Interpreter Training	ITP	Radiologic Technology	RAD
Ironworking Apprenticeship	IWA	Reading	REA
Italian	ITA	Real Estate	RLS
Japanese	JPN	Record and Information Management	RIM

## COURSE PREFIXES

Recreation  
Religion  
Reserve Officers Training Corps - ROTC - Air Force  
Reserve Officers Training Corps - ROTC - Army  
Reserve Officers Training Corps - ROTC - Navy  
Respiratory Therapy  
Restaurant, Culinary, and Foodservice Management  
Russian  
Sheet Metal  
Sign Language  
Social Services  
Sociology  
Spanish  
Speech Communication  
Technology  
Theater  
Tohono O'odham  
Training for Special Education  
Training in Behavioral Health  
Translation Studies  
Travel Industry Operations  
Tribal Government  
Welding  
Wheels of Learning  
Writing  
Yaqui

REC  
REL  
MLA  
MLS  
NSP  
RTH  
RCF  
RUS  
SMA  
SLG  
SSE  
SOC  
SPA  
SPE  
TEC  
THE  
THO  
TSE  
TBH  
TRS  
TVL  
TRB  
WLD  
WOL  
WRT  
YAQ





## ACCOUNTING

### **ACC 060 Basic Tax Preparation /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Basic skills in tax preparation. Includes preparation of federal Form 1040EZ, 1040A, and a simple 1040, selected schedules, worksheets, and other forms. Also includes preparation of Arizona tax forms. Requires supervised tax preparation work at a community site. May be taken four times for a maximum of twelve credit hours.

### **ACC 100 Practical Accounting Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to accounting systems for small businesses. Includes the basic accounting cycle, the use of special journals, procedures for controlling cash, and payroll accounting.

### **ACC 101 Financial Accounting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to accounting as a service activity, analytical discipline, and information system. Includes quantitative information to make decisions, identification of events that characterize economic activity, and the collection and communication of economic activity. Also includes recording accounting data, internal control of assets, measurement and reporting of liabilities and owners' equity.

### **ACC 102 Managerial Accounting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ACC 101, MAT 092.

Accounting information for managers. Includes concepts for those who are inside an organization and who are responsible for planning, directing and controlling its operation. Also includes process costing, profit planning, overhead analysis, and capital budgeting decisions.

### **ACC 150 Payroll Accounting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ACC 100 or 101.

Current practices in payroll accounting and tax reporting. Includes laws affecting payroll and computation of gross earnings and withholding taxes. Also includes computerized payroll systems.

### **ACC 173 Introduction to Fund Accounting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ACC 101.

Accounting practices in governmental units, such as city, county, and state agencies, and other not-for-profit organizations. Includes temporary fund balance accounts, budget entries, encumbrances, and tax receivables.

### **ACC 200 Accounting on the Microcomputer I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ACC 100 or 101.

Fundamental accounting applications using commercial programs. Includes the use of modular accounting programs and electronic spreadsheets, emphasizing hands-on experience.

### **ACC 201 Intermediate Accounting I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ACC 102.

Comprehensive coverage of financial accounting topics. Includes application, rationale, and clarification of the reasons for specific accounting principles. Also includes balance sheets, cash and receivables, inventories, and temporary and long term investments.

### **ACC 202 Intermediate Accounting II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ACC 201.

Continuation of ACC 201. Includes continual integration of theory and practice, investments, long and short term liabilities, pension plans, stockholders equity, and analysis of financial statements.

### **ACC 203 Cost Accounting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ACC 102, MAT 122, REA 112.

Interpretation, use, and analysis of cost data for management planning, coordination and control. Includes the application of theories and concepts which underlie cost accounting and budgeting. Also includes job order costing, spoilage, standard costs, and capital budgeting.

### **ACC 204 Individual Tax Accounting /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ACC 100 or 101.

Principles of accounting for taxes on personal income and business operations of self-employed individuals. Includes federal tax law, inclusions and exclusions from gross income, tax credits, property transactions, capital gains and losses, and tax preparation using a professional computer software package.

### **ACC 205 Corporate and Partnership Tax Accounting /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ACC 101.

Principles of federal taxation of partnerships and corporations (including S corporations). Includes gift, trust, and estate taxation.

### **ACC 210 Accounting on the Microcomputer II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ACC 200.

Continuation of ACC 200. Advanced accounting applications using commercial programs. Includes the use of modular accounting programs and electronic spreadsheets, emphasizing hands-on experience.

### **ACC 215 Quickbooks Computer Accounting /2 cr. hrs./2 periods (2 lab)**

Prerequisite(s): Consent of instructor.

Use of current Quickbooks software to set up and maintain accounting records for a small business. Includes accounts receivable, accounts payable, inventory, and payroll features.

**ACC 220 Peachtree Computer Accounting /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Consent of instructor.

Use of current Peachtree software to set up and maintain accounting records for a small business. Includes accounts receivable, accounts payable, inventory, and payroll features.

**ACC 298 Advanced Topics in Accounting: /1-3 cr. hrs./1-3 periods (1-3 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics in accounting which reflect current technologies, issues, and trends. May be taken a total of four times for a maximum of twelve credits.

**ACC 299 Co-op Related Class in ACC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**ACC 299 Co-op Work in ACC /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

## ADMINISTRATION OF JUSTICE

**AJS 101 Introduction to Administration of Justice Systems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History and philosophy of administration of justice in America. Includes recapitulation of the system, identifying the various subsystems, role expectations and their interrelationships, theories of crime, punishment and rehabilitation, ethics, education and training for professionalism in the system, and career opportunities related to local criminal justice agencies.

**AJS 107 Patrol Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): AJS 101 or concurrent enrollment or consent of instructor. Patrol as one of the primary police operations. Includes conspicuous presence as a means of suppressing crime and preserving peace, organization and functions of police patrol, methods, techniques and responsibility in patrol operations, use of special equipment, and application of laws on arrest, search and seizure.

**AJS 109 Criminal Law /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Historical development and philosophy of law and constitutional provisions. Includes definitions, classifications of crime and their application to the system of administration of justice, legal research, study of case law, methodology, and concepts of law as a social force.

**AJS 115 Criminal Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of the system used in the U.S. to administer criminal cases. Includes implications for civil rights, the police process, the prosecuting attorney, the defense attorney, courts, grand jury, trial jury, coroner-medical examiner, judicial process, and the trial, and its aftermath.

**AJS 123 Corrections as a System /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of corrections as a system and as a part of the justice process. Includes history, theories, systems of operations in corrections, analysis of the objectives of correctional administration, relevant law, and public relations.

**AJS 146 Child Abuse Intervention and Protection /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of the principles and methods of dealing with child abuse. Includes the many definitions and forms of child abuse, recognition of its symptoms, family dysfunctions, the interaction with and counseling of the parental abuser, and the utilization of available community resources. (Same as SSE 146.)

**AJS 150 Defensive Tactics for Law Enforcement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Force tactics as they apply to law enforcement. Includes the use of verbal and physical skills to accomplish control with a minimum potential of injury to the officer or subject. Also includes handcuffing, impact weapons, and handgun retention.

**AJS 152 Beginning Marksmanship /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to firearms. Includes moral and legal aspects of firearms, safety and range practice.

**AJS 160 Introduction to Youth Services /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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 the normal development needs of children and adolescents, the special needs of dependent, delinquent, challenged and special needs youth, roles of youth workers, and the need to focus on prevention through strengthening families and communities. Also includes a survey of local youth serving agencies. (Same as SSE 160.)

**AJS 201 Rules of Evidence /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The origin, development, philosophy and constitutional basis of evidence. Includes constitutional and procedural considerations affecting arrest and

search and seizure. Also includes degrees of evidence and rules governing admissibility, judicial decisions interpreting individual rights, and case studies.

**AJS 204 Criminal Investigation and Report Preparation /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): AJS 109 or concurrent enrollment or consent of instructor. Fundamentals of modern criminal investigation. Includes procedures and skills in search and investigation, conduct at the crime scene, collection and preservation of evidence, developing sources of information, preparation of cases for court prosecution, and report-writing requirements for administration and court use.

**AJS 208 Police Administration /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): AJS 101 or consent of instructor. Introduction to the principles of police organization, administration and service. All phases of police administration are discussed, including recruitment, training, promotion, complaints, records and communications.

**AJS 210 Police Community and Human Relations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Survey of the police officer's role in attaining and maintaining public support. Includes recognition and understanding of community problems, community action programs, methods of coping with crisis situations, ethnic and minority cultures, various environments, crime prevention, and police operations in relation to these cultures and environments.

**AJS 212 Juvenile Justice Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Analysis of the philosophy, organization, functions and jurisdiction of juvenile agencies and courts. Includes Arizona juvenile statutes, detention, court procedures, and case disposition. Also includes custody and treatment of the offender and crime prevention methods and reporting procedures applicable to juvenile offenders.

**AJS 220 Organized Crime Investigation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Comprehensive historical and social survey of organized crime. Includes its origin, development, modus operandi and effect upon society.

**AJS 225 Crime and Delinquency /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Survey of the nature, extent and control of crime and delinquency. Includes comparison of theoretical and practical approaches to causation, prevention, punishment and treatment, and current problems.

**AJS 245 Treatment of the Offender: Institutional and Field /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): AJS 101 or concurrent enrollment or consent of instructor. Survey of correctional services and treatment. Includes philosophy, history, correctional models by type and function, institutional treatment, parole operations, community based treatment and special treatment programs.

**AJS 246 Race and Ethnicity Issues in the Administration of Justice / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Focus on minorities in the criminal justice system. Includes multi-cultural community ties: challenges for law enforcement and corrections, cross-cultural communication, the Latino/Hispanic American offender, the American Indian offender, the African American offender, peace officer image and cultural sensitivity, and police officer professionalism and peacekeeping strategies in a diverse society.

**AJS 256 Justice System Administration /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): AJS 101 or consent of instructor. Examination of crime, punishment, and correctional practices. Includes current issues affecting the economy, politics, social stability, prison and community corrections, and minorities.

**AJS 290 Administration of Justice Field Experience /3 cr. hrs./ 16 periods (1 lec., 15 lab)**

Prerequisite(s): Consent of instructor. Participation in community administration of justice agencies. Includes experience in the practical application of classroom instruction. Also includes biweekly seminars to discuss theory and practice pertinent to the agency experience. May be taken two times for a maximum of six credit hours.

**AJS 298 Advanced Topics in Administration of Justice: /1-3 cr. hrs./ 1-3 periods (1-3 lec.)**

Prerequisite(s): AJS 101 or consent of instructor. Advanced topics in the administration of justice which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

## ADMINISTRATIVE SUPPORT CAREERS

**ASC 050 Fundamentals of Business English /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None. English basics in business. Includes parts of speech, sentence patterns, and punctuation. Also includes emphasis on business-related material.

**ASC 060 Data Entry Microcomputer Proficiency Certification /5 cr. hr./ 1 period (1 lab)**

Prerequisite(s): None.

Skill building and certification for data entry on a microcomputer. Includes data input and a certification speed test. May be taken four times for a maximum of two credit hours.

**ASC 100 Data Entry Beginning Keystroke Development /2 cr. hrs./ 6 periods (6 lab)**

Prerequisite(s): None.

Training for beginning level speed and accuracy. Includes ten key pad, alpha-numeric pre-timed and self-timed exercises, and dexterity drills. May be taken four times for a maximum of eight credit hours.

**ASC 101 Shorthand I /3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ASC 111, 151.

An abbreviated system of writing. Includes the shorthand alphabet, English skills, shorthand speed, and transcription techniques.

**ASC 102 Shorthand II and Refresher /3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ASC 101 or one year high school shorthand or dictation speed of 50 words per minute, and ASC 151 or concurrent enrollment.

Continuation of ASC 101. Includes shorthand theory, English skills, and mailable transcription techniques.

**ASC 111 Computer Keyboarding and Document Production /3 cr. hrs./ 5 periods (3 lec., 2 lab)**

Prerequisite(s): None.

Theory and practice of computer keyboarding. Includes speed and accuracy techniques, language arts skills, correspondence, employment documents, and word processing commands.

**ASC 111A Computer Keyboarding and Document Production: Keyboard /1 cr. hr./1.7 periods (1 lec., .7 lab)**

Prerequisite(s): None.

Techniques and functions for computer keyboarding skills. Includes keyboarding, speed and accuracy, language arts, and word processing commands.

**ASC 111B Computer Keyboarding and Document Production: Formatting Documents /1 cr. hr./1.7 periods (1 lec., .7 lab)**

Prerequisite(s): ASC 111A.

Continuation of ASC 111A. Includes speed and accuracy, language arts, correspondence, and word processing commands.

**ASC 111C Computer Keyboarding and Document Production: Applications / 1 cr. hr./1.6 periods (1 lec., .6 lab)**

Prerequisite(s): ASC 111B.

Continuation of ASC 111B. Includes speed and accuracy, correspondence, employment documents, language arts, and word processing commands.

**ASC 112 Advanced Computer Keyboarding: Document Production / 3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ASC 111.

Continuation of ASC 111. Includes speed and accuracy techniques, language arts, correspondence, reports, tables, financial statements, specialized reports, legal documents, business reports, and word processing commands.

**ASC 112A Advanced Computer Keyboarding: Skill Development/ Production /1 cr. hr./1.7 periods (1 lec., .7 lab)**

Prerequisite(s): ASC 111 or equivalent proficiency.

Continuation of ASC 111. Includes speed and accuracy techniques, language arts, correspondence, reports, and word processing commands.

**ASC 112B Advanced Computer Keyboarding: Specialized Formatting / 1 cr. hr./1.7 periods (1 lec., .7 lab)**

Prerequisite(s): ASC 112A or equivalent proficiency.

Continuation of ASC 112A. Includes speed and accuracy techniques, language arts, tables, financial statements, specialized reports, legal documents, and word processing commands.

**ASC 112C Advanced Computer Keyboarding: Simulated Office Projects /1 cr. hr./1.6 periods (1 lec., .6 lab)**

Prerequisite(s): ASC 112B or equivalent proficiency.

Continuation of ASC 112B. Includes speed and accuracy techniques, language arts, business forms, in-basket exercises, and word processing commands.

**ASC 113 Calculating Techniques: Numeric Keypad/Electronic Calculator /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Ten-key pad by touch method on either the computer or the electronic calculator. Includes keypad development, speed and accuracy development, and business problem solving applications.

**ASC 114 Computer Keyboarding: Skillbuilding /1 cr. hrs./2 periods (1 lec., 1 lab)**

Prerequisite(s): ASC 111A or equivalent proficiency on computer keyboard by touch.

Review of computer keyboarding. Includes skill assessment, skill building development, and increased keyboarding ability.

**ASC 123 Professional Development for Administrative Support / 2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): ASC 111A or equivalent proficiency on computer keyboard. Procedures and skills for securing a job. Includes resume writing, interviewing techniques, application forms, application letter, researching requirements, and job standards and attitudes.

**ASC 124 Computer Applications: Data Entry /1 cr. hr./1.6 periods (.9 lec., .7 lab)**

Prerequisite(s): ASC 111A or equivalent proficiency on the computer keyboard.

Practical applications using data entry software for business. Includes terminology and procedures, operations, creating files, and data manipulation.

**ASC 125 Data Entry Procedures and Operations /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Practical software applications. Includes terms and procedures, microcomputer operating routines, database file creation, and using word processing, spreadsheet, and database in an integrated software package.

**ASC 126 Microcomputer Software/Hardware Topics /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ASC 100.

Introduction to microcomputer operating procedures. Includes software, hardware, networks, and operational concerns.

**ASC 131 Computer Applications: Word Processing Operations / 3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ASC 111A or concurrent enrollment or equivalent proficiency on the computer keyboard.

Word processing software. Includes creating documents using menus, editing text in a document, text enhancement, page formatting, writing tools, file management, creating tables, sorting and calculating, merging documents, text columns, outlines, macros, templates and styles, indexes and table of contents, graphic images, drawing and charting, and forms. ASC 131A, 131B, and 131C together constitute ASC 131.

**ASC 131A Computer Applications: Word Processing Operations I / 1 cr. hr./1.6 periods (.7 lec., .9 lab)**

Prerequisite(s): ASC 111A or concurrent enrollment or equivalent proficiency on the computer keyboard.

Introduction to word processing software. Includes creating documents using menus, editing text in a document, text enhancement, page formatting, writing tools, and file management.

**ASC 131B Computer Applications: Word Processing Operations II / 1 cr. hr./1.4 periods (.7 lec., .7 lab)**

Prerequisite(s): ASC 131A.

Continuation of ASC 131A. Includes creating tables, sorting and calculating, merging documents, text columns, outlines, and macros.

**ASC 131C Computer Applications: Word Processing Operations III / 1 cr. hr./1.4 periods (.7 lec., .7 lab)**

Prerequisite(s): ASC 111A or equivalent proficiency on the computer keyboard.

Continuation of ASC 131B. Includes templates and styles, indexes and table of contents, graphic images, drawing and charting, and forms.

**ASC 132 Computer Applications: Database Operations/2 cr. hrs./ 4 periods (1 lec., 3 lab)**

Prerequisite(s): ASC 111A or concurrent enrollment or equivalent proficiency on the computer keyboard.

Spreadsheet operations using current software. Includes file creation, data formatting, special features, special functions, saving and printing.

**ASC 133 Computer Applications: Spreadsheet Operations /2 cr. hrs./ 4 periods (1 lec., 3 lab)**

Prerequisite(s): ASC 111A or concurrent enrollment or equivalent proficiency on the computer keyboard.

Spreadsheet operations using current software. Includes file creation, data manipulation, graphs, windows, and reports.

**ASC 134 Data Entry Advanced Keystroke Development /2 cr. hrs./ 6 periods (6 lab)**

Prerequisite(s): ASC 100 or 7000 keystrokes per hour.

Training for advanced level speed and accuracy. Includes alpha-numeric pre-timed and self-timed exercises, dexterity drills, and speed measurement.

**ASC 135 Computer Applications: Integrated Windows Software Operations /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): ASC 111A or concurrent enrollment or equivalent proficiency on the computer keyboard.

Practical applications using integrated windows software. Includes word processing, database, spreadsheets, and slide presentation.

**ASC 136 Data Entry Simulated Work Site Routines /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ASC 125.

Operations and techniques in a data entry work environment. Includes daily transactions, record extraction, corrections and additions, billing, numerical and alphabetical sorting, overdue notices, and operator statistics.

**ASC 141 Legal Terms /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Language used in a legal setting. Includes general terminology, court system, and specialized areas of law.



**ASC 142 Legal Procedures I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ASC 112.

General law office procedures. Includes legal support staff, career development, legal ethics, written communication, calendaring, court system, preparation of legal documents, family law, contract law, and employment law.

**ASC 143 Legal Procedures II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ASC 142 or consent of instructor.

Continuation of ASC 142. Includes legal support staff, court systems, civil litigation and torts, and criminal litigation procedures.

**ASC 150 Computer Applications: Software Skills Update /1-3 cr. hrs./1.6-5 periods (.6-2 lec., 1-3 lab)**

Prerequisite(s): None.

Techniques and procedures using current equipment and software. Includes file creation, data manipulation, calculations, editing, and printing. May be taken up to a maximum of twelve credit hours.

**ASC 151 Business English /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ASC 050 or assessment at the WRT 100 level.

English fundamentals essential for modern business communication. Includes reference skills, parts of speech, basic sentence terms, verbals, sentences, punctuation, writing style, and grammar usage.

**ASC 161 Medical Office Procedures /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ASC 112 or equivalent proficiency or concurrent enrollment, and ASC 162.

Services and procedures used in a medical office. Includes human relations, telephone and electronic communication, financial activities, word processing, administrative support, filing, machine transcription, mail processing, patient records, insurance, and medical and business terms.

**ASC 162 Medical Terms I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Terminology used in the medical field. Includes word parts and forms, anatomy and physiology, diseases, and reference materials.

**ASC 164 Medical Transcription I /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): ASC 162 or experience in the medical field, and ASC 131A, 131B, or word processing experience.

Terms and format for transcribing medical reports. Includes ethics and legal responsibility, preparation of medical reports, transcription of medical records, rules, and medical terminology.

**ASC 171 Office Procedures /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): ASC 111 or concurrent enrollment.

Functions and procedures used in a wide range of office activities. Includes business operations, visitors and clients, office functions, document production, communication skills, office duties and tasks, notetaking, travel

arrangements, meetings and conferences, office equipment, and professional attitudes and image.

**ASC 199 Co-op Related Class in ASC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**ASC 199 Co-op Work in ASC /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**ASC 201 Shorthand III /3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ASC 102 or two years of high school shorthand or dictation speed of 70 words per minute.

Continuation of ASC 102. Includes shorthand skill development, English skills, and mailable transcription techniques. Also includes speed development.

**ASC 224 Machine Transcription /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): ASC 111 or computer keyboarding speed of 35 wpm and ability to format manuscripts, and tables, and ASC 151.

Skills and techniques of transcribing dictated materials. Includes transcription equipment, transcription techniques, language arts development, mailable documents, and career opportunity awareness.

**ASC 230 Desktop Publishing for Administrative Support Personnel /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ASC 131A, 131B.

Desktop publishing for administrative support personnel. Includes a variety of desktop publishing software, terms and concepts, text, graphics, page format, other features, and basic design.

**ASC 242 Legal Procedures III /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ASC 143 or consent of instructor.

Continuation of ASC 143. Includes business organizations, real estate, estate planning, wills and trusts, probate and protective proceedings.

**ASC 251 Business Communications I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ASC 151 or consent of instructor.

Principles of effective writing and listening skills. Includes language development, verbal and nonverbal communications, customer relations, and writing and editing correspondence.

**ASC 252 Bilingual Commercial Correspondence /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): ASC 112 or concurrent enrollment, ASC 151 or WRT 101, SPA 202 or 211 or concurrent enrollment. Fluent Spanish and English proficiency required.

Business correspondence in Spanish and English. Includes business terminology, mechanics of letter formatting and composing, translation of letters, styles and types of letters, business vocabulary, and reading and writing business material.



**ASC 255 Business Communications II /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): ASC 251.

Development of verbal and written communication skills needed at the supervisory level. Includes supervisory communication skills, customer relations.

**ASC 262 Medical Terms II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ASC 162.

Continuation of ASC 162. Includes advanced work with word parts and forms, anatomy and physiology, diseases, and reference materials. Also includes therapeutic drugs and medical reports.

**ASC 264 Medical Transcription II /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): Keyboarding at 50 wpm, ASC 164 and 262.

Continuation of ASC 164. Includes punctuation, capitalization, numbers, figures, abbreviations, business letter transcription, proofreading, spelling, word division and reference books.

**ASC 266 Medical Transcription III /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): Keyboarding at 60 wpm, ASC 264.

Continuation of ASC 264. Includes advanced training in punctuation, capitalization, rules, medical correspondence, proofreading, prefixes and suffixes, transcription, and medical terms.

**ASC 281 Administrative Support Operations /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ASC 171.

Principles and procedures for administrative office personnel. Includes business operations, human resources, administrative responsibilities, production, professional image, and research, and organization of business data.

**ASC 297 Administrative Support Seminar: /.25-4 cr. hrs./25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Administrative support job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**ASC 298 Advanced Topics in Administrative Support: /.5-3 cr. hrs./5-3 periods (.5-3 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics in administrative support which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**ASC 299 Co-op Related Class in ASC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**ASC 299 Co-op Work in ASC /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**AMERICAN INDIAN STUDIES****AIS 089 Native American Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to works of Native American authors. Includes literary forms, historical context, moral implications of the literature, and cultural significance.

**AIS 101 Introduction to American Indian Studies I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of the diversity of American Indian tribes. Includes successive colonization waves and conflict between Native Americans and colonizing nations. Also includes the development of Native American cultures, and policies toward Native Americans.

**AIS 102 Introduction to American Indian Studies II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): AIS 101.

Continuation of AIS 101. Includes diversity of American Indian tribes, successive colonization waves, and conflict between Native Americans and colonizing nations. Also includes contemporary issues and their impact on American Indians in transition and an introduction to Native American theories and philosophies.

**ANTHROPOLOGY****ANT 101 Human Origins and Prehistory /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of physical anthropology and archaeology with emphasis on the emergence of the human species from its origins based on our understanding of the archaeological and fossil record. (Same as ARC 101).

**ANT 102 Introduction to Cultural Anthropology and Linguistics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of human societal structure. Includes historical events, communication and language, marriage and family, environmental adaptation, economics, politics, gender, and religion. Also includes an introduction to the comparative study of cultures.

**ANT 104 Humanity and the Environment Discovery Laboratory /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Concurrent enrollment in ANT/ENV 105

Laboratory exercises 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. This laboratory course satisfies the fourth credit hour of the Biological and Physical Science general education transfer credit if taken along with ANT 105. (Same as ENV 104.)

**ANT 105 Humanity and the Environment /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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. (Same as ENV 105.)

**ANT 110 Buried Cities and Lost Tribes /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of the human past. Includes studying important archaeological finds from various cultures around the world. (Same as ARC 110.)

**ANT 112 Exploring Non-Western Cultures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Anthropological overview of non-Western cultures, world views and social organizations. Includes ethnographic case studies and survey of analytic models.

**ANT 126 Peoples in Transition /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Anthropological approaches to social change. Includes a comparison of cultures in situations of contact and change, and of methods and theories for studying culture change.

**ANT 127 History and Culture of the Mexican-American in the Southwest /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Who is the Mexican-American? What is his cultural heritage and what has happened to it in the United States? (Same as HIS 127.)

**ANT 129 Culture and Personality /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of studies on society and the factors that influence it. Includes historical considerations, psychoanalytic elements, distributional models, religion and myth, the family and community, and methods utilized in the studies.

**ANT 135 Pre-Columbian Art /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the art and architecture of the Americas from the earliest times to the period of the Spanish conquest. Includes archeology, art history, ethno-

history, folklore, ethnography, and literature of Pre-Columbian peoples. Also includes recognition of major art styles and important sites. (Same as ART 135 and HIS 135.)

**ANT 136 Masks /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of traditional masks and sculpture of the tribal peoples of North America, Africa, Asia, Indonesia, and Oceania. Includes archeology, art history, ethnohistory, folklore, ethnography, and literature of tribal peoples. Also includes recognition of major art styles and their cultural relationships. (Same as ART 136 and HIS 136.)

**ANT 148 History of Indians of North America /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Origin and distribution of native populations of North America and the historical development and interrelations of cultures. (Same as HIS 148.)

**ANT 150 Afro-American History and Peoples /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

A history of Black people in American society. Their past, present and future are explored. Emphasis on their status and special problems as a minority group. (Same as HIS 150.)

**ANT 198 Special Topics in Anthropology: /1-3 cr. hrs./1-9 periods (0-3 lec., 0-9 lab)**

Prerequisite(s): Consent of instructor.

Special topics in anthropology which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**ANT 200 Biological Anthropology /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

The interaction of human biology and culture as found among various peoples and their environment.

**ANT 202 Sex, Gender, and Culture /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Anthropological examination of gender identity, roles, and relations. Includes studies of families, domestic groups, and communities. Also includes selected case studies and frameworks for analysis.

**ANT 205 Introduction to Southwestern Prehistory /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. (Same as ARC 205.)

**ANT 206 Contemporary Native Americans of the Southwest /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Anthropological examination of Native American cultures of the Southwestern United States. Includes linguistic and cultural diversity, Southwestern Native American economies, cultural configuration, and frameworks for analysis.

**ANT 207 Southwestern Prehistory Lab /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Co-Requisite(s): Concurrent enrollment in ANT/ARC 205.

Laboratory and field activities to provide interpretive context for prehistoric cultures of the American Southwest. (Same as ARC 207.)

**ANT 210 Cultural Anthropology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ANT 102.

Exploration of the study of culture. Includes anthropological theory and method, a comparison of ethnographies, and analytic paradigms. Also includes selected topics.

**ANT 215 The Nature of Language /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to anthropological linguistics. Includes the history of linguistics and language, descriptive linguistics, sociolinguistics, language and thought, language acquisition, and the biology of language development. Also includes bilingualism and multiculturalism.

**ANT 225 Archaeology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the concepts and methods which archaeologists use to reconstruct human prehistory. (Same as ARC 225.)

**ANT 250 Archaeology Laboratory /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): ANT/ARC 101.

Laboratory experience in the curating, processing and analysis of prehistoric and historic artifacts recovered from archaeological sites. (Same as ARC 250.)

**ANT 275 Archaeological Excavation /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): None.

Introduction to the techniques of archaeological mapping, excavation and recording. Includes field experience in southern Arizona. (Same as ARC 275.)

**ANT 276 Archaeological Exploration /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): ARC 180 or concurrent enrollment.

Techniques and methods for recognizing, locating and recording archaeological sites. Includes fieldwork in southern Arizona. (Same as ARC 276.)

**ANT 289 Field Instruments /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ARC 286, ANT/BUS/CSC 105.

Electronic instrument utilization in the field. Includes geophysical instruments, remote sensing equipment, and global positioning systems. Also includes software applications and data manipulation. (Same as ARC 289.)

**ANT 295 Field Projects /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): Consent of instructor.

Participation in a field project in one of the subfields of anthropology. (Same as ARC 295.)

**ANT 296 Individual Studies /1-3 cr. hrs./1-3 periods (1-3 lec)**

Prerequisite(s): Consent of instructor.

Students independently continue their development in anthropology with the help of a faculty member. May be taken three times for a maximum of nine credit hours. (Same as ARC 296.)

**ANT 298 Advanced Topics in Anthropology: /1-3 cr. hrs./1-9 periods (0-3 lec., 0-9 lab)**

Prerequisite(s): Consent of instructor.

Advanced topics in anthropology which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**ARCHAEOLOGY****ARC 075 Field Archaeology /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): None.

Participation in archaeological field activities. A nontechnical course with an emphasis on local field work.

**ARC 101 Human Origins and Prehistory /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of physical anthropology and archaeology with emphasis on the emergence of the human species from its origins based on our understanding of the archaeological and fossil record. (Same as ANT 101.)

**ARC 105 Survey of Microcomputer Uses /3 cr. hrs./4 periods (3 lec., 1 lab)**

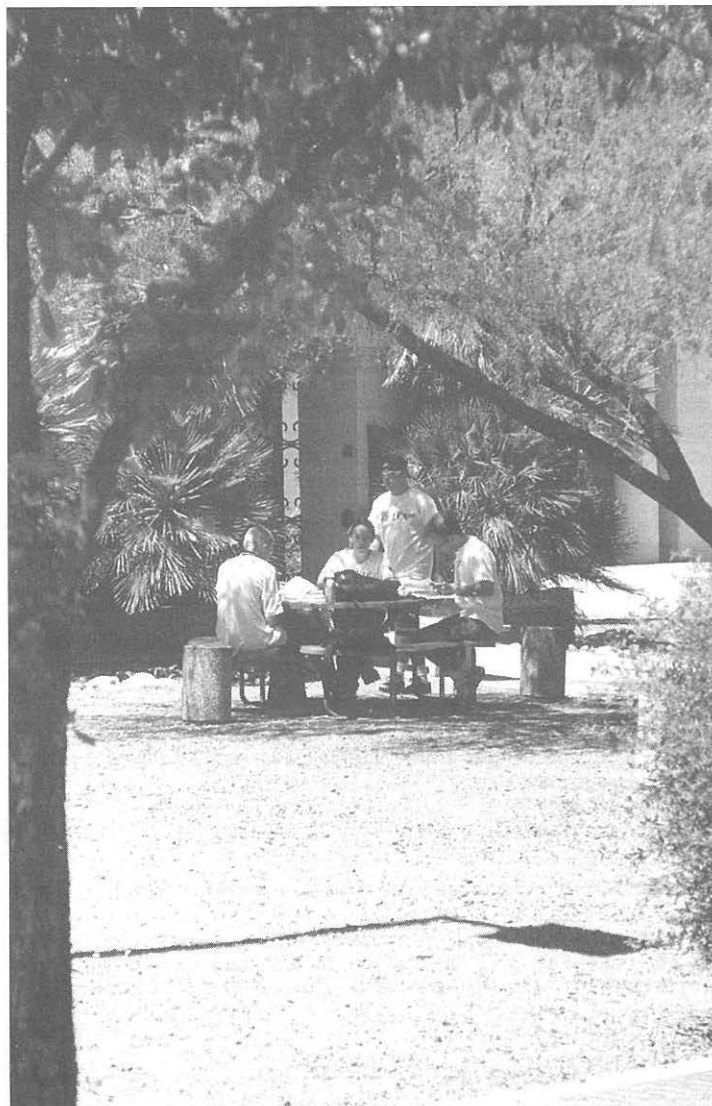
Prerequisite(s): None.

Study of microcomputer application packages. Includes operating system commands, word processing, spreadsheet and database applications. Not for programmer/analyst or engineering majors. (Same as BUS 105 and CSC 105.)

**ARC 110 Buried Cities and Lost Tribes /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of the human past. Includes studying important archaeological finds from various cultures around the world. (Same as ANT 110.)



**ARC 180 Artifact Identification /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Introduction to the recognition, identification and classification of the various types of artifacts recovered from local archaeological sites.

**ARC 205 Introduction to Southwestern Prehistory /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. (Same as ANT 205.)

**ARC 207 Southwestern Prehistory Lab /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Concurrent enrollment in ANT/ARC 205.

Laboratory and field activities to provide interpretive context for prehistoric cultures of the American Southwest. (Same as ANT 207.)

**ARC 225 Archaeology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the concepts and methods which archaeologists use to reconstruct human prehistory. (Same as ANT 225.)

**ARC 250 Archaeology Laboratory /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): ANT/ARC 101.

Laboratory experience in the curating, processing and analysis of prehistoric and historic artifacts recovered from archaeological sites. (Same as ANT 250.)

**ARC 275 Archaeological Excavation I /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): None.

Introduction to the techniques of archaeological mapping, excavation and recording. Includes field experience in southern Arizona. (Same as ANT 275.)

**ARC 276 Archaeological Exploration I /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): ARC 180 or concurrent enrollment.

Techniques and methods for recognizing, locating and recording archaeological sites. Includes fieldwork in southern Arizona. (Same as ANT 276.)

**ARC 277 Archaeological Excavation II /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): ANT/ARC 275.

Continuation of ANT/ARC 275. Includes advanced excavation techniques, field crew supervision, and selected field projects.

**ARC 278 Archaeological Exploration II /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): ANT/ARC 276 and consent of instructor.

Continuation of ARC 276. Includes archival investigation, advanced field techniques, crew supervision, and selected field projects.

**ARC 281 Field Computers /1 cr. hr./2 periods (2 lab)**

Prerequisite(s): ANT/BUS/CSC 105.

Implementing hand-held, lap-top, and palm computers in a field setting. Includes systems configuration, data transfer, and instrument interfacing.

**ARC 282 Managing Archaeological Data /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): ANT/ARC 276, 277, ANT/BUS/CSC 105.

Organization and management of data associated with archaeological field work and collections. Includes collection strategies and techniques, application software, and data contexts.

**ARC 283 ArchaeoCAD /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ANT/BUS/CSC 105.

Computer aided drafting software emphasizing techniques and hardware appropriate for archaeological applications. Includes hardware configuration, approaches to CAD, and data collection techniques.

**ARC 284 Archaeocartography /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ANT/BUS/CSC 105.

Cartographic techniques and hardware for archaeological applications. Includes software for cartography, geographic information systems, graphic portrayal, and desktop mapping.

**ARC 285 Field Mapping I /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): ANT/ARC 275.

Optical surveying instruments and associated software for mapping archaeological sites. Includes mapping concepts, instrument operation, field data techniques, and producing maps.

**ARC 286 Field Mapping II /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): ARC 285 and consent of instructor.

Continuation of ARC 285. Includes electronic surveying instruments, computerized data collection systems, and associated software for mapping archaeological sites.

**ARC 289 Field Instruments /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ANT/ARC 286, ANT/BUS/CSC 105.

Electronic instrument utilization in the field. Includes geophysical instruments, remote sensing equipment, and global positioning systems. Also includes software applications and data manipulation. (Same as ANT 289.)

**ARC 295 Field Projects /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): Consent of instructor.

Participation in a field project in one of the subfields of anthropology. (Same as ANT 295.)

**ARC 296 Individual Studies /1-3 cr. hrs./1-3 periods (1-3 lab)**

Prerequisite(s): Consent of instructor.

Students independently continue their development in anthropology with the help of a faculty member. May be taken three times for a maximum of nine credit hours. (Same as ANT 296.)

**ART****ART 100 Basic Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Introduction to the elements and principles of visual design. Includes line, shape, space, value, texture, volume and color. Also includes skill development in organizing these elements and applying the visual principles of harmony, variety, balance, tension, rhythm, proportion, repetition, and contrast.

**ART 105 Art Appreciation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the visual arts. Includes the exploration of aesthetic theory, art history, art criticism, and 2-D studio production. Also includes art theory, slide and digital exploration of major periods in World Art, studio activities in two-dimensional materials, and visits to local art museums.

**ART 110 Drawing I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Introduction to drawing. Includes use of graphic media: pencil, charcoal, and ink on paper. Also includes elements of design as applied to representational drawing.

**ART 115 Color and Composition /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Introduction to recognizing color principles and relationships and analyzing and duplicating colors. Includes creating the illusion of dimension, transparency, and luminosity in original design. Also includes the use of a variety of materials.

**ART 120 Sculptural Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Extension of ART 100 into sculptural concepts and media. Includes study of volume, mass, and space relationships through modeling, casting, carving and construction.

**ART 123 Lost Wax Sculpture Casting Workshop /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): ART 100 or equivalent art experience.

Fundamentals of art metal sculpture casting using the ceramic shell mold process. Includes wax design (direct and indirect), pattern making techniques, mold making, casting in bronze and aluminum and metal finishing processes.

**ART 130 Art and Culture I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Slide and lecture discussions of western civilization's major contributions to the development of sculpture, painting, and architecture. Includes a survey from prehistoric through Gothic art.



**ART 131 Art and Culture II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Continuation of ART 130. Includes western civilization's major contributions to the development of sculpture, painting, and architecture from the renaissance into the twentieth century.

**ART 132 Modern Art Survey /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of modern art trends in painting, sculpture, and architecture from the middle 19th century to recent times. Slide and lecture discussions will emphasize both formal and contextual aspects of art works.

**ART 133 Art in America /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introductory survey of American art from the colonial period to the present. Includes emphasis on American painting, sculpture, decorative arts, and architecture as well as European influences. Also includes folk art, crafts, art of under represented Americans, and issues surrounding cultural production.

**ART 134 Arts of Diverse Cultures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the artistic traditions of Asia, Africa, Oceania, Native North America, Mesoamerica, and South America. Includes social/cultural contexts of art works and issues of Western interpretation of non-Western art.

**ART 135 Pre-Columbian Art /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the art and architecture of the Americas from the earliest times to the period of the Spanish conquest. Includes archeology, art history, ethnohistory, folklore, ethnography, and literature of Pre-Columbian peoples. Also includes recognition of major art styles and important sites. (Same as ANT 135 and HIS 135.)

**ART 136 Masks /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of traditional masks and sculpture of the tribal peoples of North America, Africa, Asia, Indonesia, and Oceania. Includes archeology, art history, ethnohistory, folklore, ethnography, and literature of tribal peoples. Also includes recognition of major art styles and their cultural relationships. (Same as ANT 136 and HIS 136.)

**ART 140 Photography I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Introduction to black and white photography as an art form with a general inquiry into basic techniques of making silver images. Includes developing, printing, enlarging, aesthetic language of photography, perspective and photography as an art form. Individual and group work.

**ART 141 Photography II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 140.

Extension of ART 140. Includes use of the medium as an art form with optimum creativity, technical skill and visual finesse. Also includes portfolio and book production, field trips and research.

**ART 143 Commercial Photography /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 141.

Introduction to commercial fields in photography and principles and practice of photography as a business. Includes studio management, laboratory techniques, pricing, record keeping, advertising, portraiture, weddings, and industrial and aerial work.

**ART 160 Ceramics I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100 or concurrent enrollment.

Introduction to ceramics. Includes wheel and hand-built forms and basic glazing techniques.

**ART 164 Raku Pottery Workshop /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): ART 160 or equivalent ceramic experience.

Introduction to Raku, a low temperature, quick-firing ceramics method developed in Sixteenth Century Japan. Includes traditional and contemporary approaches involved in clay body composition, in the forming, glazing and firing of pots and in Raku kiln building.

**ART 170 Metalwork I: Jewelry /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Exploration of the basic techniques and design approaches used in the fabrication of jewelry and other metalwork. Includes construction, casting, forming, surface embellishment, and other techniques.

**ART 172 Knife Making Workshop /1 cr. hr./1.7 periods (.7 lec., 1 lab)**

Prerequisite(s): ART 100 or equivalent art experience.

Introduction to essential processes used in knife making. Includes design, layout, materials, angle structure, forging, heat treating, and finishing. Also includes ornamentation methods such as inlay, engraving, chasing and etching.

**ART 174 Blacksmithing Workshop /1 cr. hr./1.7 periods (.7 lec., 1 lab)**

Prerequisite(s): ART 100 or equivalent art experience.

Introduction to design, layout, materials fuels, forge making and practices. Includes hot-working ferrous and non-ferrous metals, tool making and heat treating.

**ART 180 Weaving I: Four-Harness Loom /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Weaving on a four-harness loom. Includes projects involving color, texture, pattern, and the use of tabby, twill, tubular, textural, and tapestry weaves in the creation of clothing and fiber art.



**ART 181 Mixed Media Fibers /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Introduction to fiber as an art medium. Includes fiber processes such as basketry, crochet, macrame, plaiting, surface design, and mixed media.

**ART 210 Drawing II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 110.

Continuation of ART 110. Includes further development of imaginative and technical skills in the use of space and graphic design. Also includes the development of a portfolio of finished drawings.

**ART 212 Printmaking I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Introduction to basic aesthetics and techniques of printmaking. Includes intaglio etching, relief printing, and monotypes.

**ART 213 Life Drawing /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100. (ART 110 is recommended.)

Drawing the human figure using the two-dimension concept as a graphic vehicle of expression. Includes opportunities to work in various media.

**ART 214 Printmaking II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 212.

Continuation of ART 212. Includes advanced problems in aesthetics and techniques of intaglio etching, relief printing, and monotypes. Also includes an introduction to alternative, non-traditional approaches.

**ART 215 Painting I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 110. (ART 115 is recommended.)

Studio course in beginning oil painting. Includes still-life object painting, landscape and figure studies. Also includes palette-mixing technique and stretcher bar building.

**ART 216 Screenprinting I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 100.

Introduction to screenprinting using water base and inks. Includes screen construction, the use of cut film, photo emulsion, stencil making techniques, printing techniques, and one-color and multi-color process work.

**ART 217 Painting II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 115, 215.

Continuation of ART 215. Includes advanced principles and practice of painting techniques. Also includes mixed media, the art market, and contemporary painting methods.

**ART 218 Screenprinting II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 216.

Continuation of ART 216. Advanced work in blockout, cut film, photo emulsion, photo film, and experimental stencil-making techniques. Students may select areas of interest for concentration and refinement of skills.

**ART 219 Printmaking III /3 cr. hrs./5 periods 2 lec., 3 lab)**

Prerequisite(s): ART 214.

Continuation of ART 214. Includes non-traditional approaches to printmaking such as monotypes, planographic, or mixed media processes. Also involves advanced problems in traditional intaglio etching.

**ART 220 Sculpture II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 120.

Exploration of various methods and materials used in sculpture. Methods may include modeling, casting, metal forming, construction techniques and carving. Materials may include plaster, clay, cement, bronze, aluminum, steel, copper, wood, plastics, wax and mixed media.

**ART 230 History of Photography /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Intensive study of the history of photography as an art form and its relationship to the other arts and to society. Includes development of the technical aspects of photography, styles and movements from 1839 to contemporary schools, and important photographers.

**ART 260 Ceramics II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 160.

Continuation of ART 160. Includes further development of wheel thrown and hand-built forms, glaze composition, and application techniques.

**ART 261 Ceramics III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 260.

Advanced study for students who demonstrate mastery of ceramic skills and principles taught in ART 160 and 260. Includes clay composition, glaze calculation, and advanced design problems.

**ART 262 Ceramics IV /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 260.

Advanced study for students who wish to design ceramic projects that would fit into an architectural setting. Includes the exploration of creative processes and the use of different approaches, materials, and technology to achieve design goals.

**ART 270 Metalwork II: Jewelry /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 170.

Jewelry design and production techniques. Includes casting, construction, cold forging, and stone setting in precious and non-precious metals.

**ART 271 Metalwork II: Smithing and Casting /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 170.

Design and production of aesthetic and functional objects. Includes hot and cold forging, raising, forming, and casting using various metals such as copper, silver, bronze, steel, iron, and aluminum.

**ART 280 Weaving II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ART 180.

Continuation of ART 180. Includes advanced study for students experienced on multi-harness looms. Students may select areas of interest for in-depth exploration. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I1) Independent Study in ART: Art History /1-3 cr. hrs./ 2-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in art history. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I2) Independent Study in ART: Ceramics /1-3 cr. hrs./ 3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in ceramics. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I3) Independent Study in ART: Metals /1-3 cr. hrs./3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in metals. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I4) Independent Study in ART: Painting, Drawing, and Design / 1-3 cr. hrs./3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in painting, drawing, and design. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I5) Independent Study in ART: Photography /1-3 cr. hrs./ 3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in photography. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I6) Independent Study in ART: Printmaking /1-3 cr. hrs./ 3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in printmaking. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I7) Independent Study in ART: Sculpture /1-3 cr. hrs./ 3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in sculpture. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 296 (I8) Independent Study in ART: Fibers /1-3 cr. hrs./ 3-5 periods (1-2 lec., 1-3 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects in fibers. Content to be determined by conference between student and instructor. May be taken four times for a maximum of twelve credit hours.

**ART 298 Advanced Topics in Art: /1-4 cr. hrs./1-4 periods (1-4 lec., 0-3 lab)**

Prerequisite(s): ART 100 or consent of instructor.

Development and enrichment of understanding art by a variety of advanced art-related topics and experiences. Credit may be earned for each topic taken.

**ART FOR PERSONAL DEVELOPMENT**

**APD 009-078 Art for Personal Development**

A series of workshop and lecture courses designed to develop skill in or knowledge of various media.

**APD 009 Introduction to Freehand Sketching /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Beginning freehand sketching for interested persons with little or no previous art experience. Not intended for art majors.

**APD 010 Drawing /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Workshop designed to develop skill in drawing.

**APD 011 Designing Home Interiors /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Introduction to the basic principles of interior design. Emphasis on the planning of residential interiors that will satisfy individual and family needs, values and life styles. Consumer education regarding the selection of home furnishing materials is also stressed.

**APD 012 Photography /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Workshop designed to develop skill in photography.

**APD 014 Painting I: Acrylic and Oil /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Exploration of design and composition using basic techniques in oil and/or acrylic. Emphasis on how to build a painting.

**APD 016 Painting II: Mixed Media /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 014.

Continuation of APD 014. Intermediate studio painting. Further study and practice of basic techniques and processes of painting with oil, acrylic and mixed media. Emphasis on producing a complete painting.

**APD 017 Painting III: Techniques and Composition /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 016.

Continuation of APD 016. Advanced studio painting. Emphasis on technique and composition as related to realism, expressionism and abstractionism. May be taken two times for a maximum of four credit hours.

**APD 041 La Pintura Mural En Mexico /2 cr. hrs./4 periods (1 lec., 3 lab)**

Requisito: Ninguno.

Seminario diseñado para desarrollar la habilidad en la pintura mural.

**APD 051 Mariachi Music I /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Workshop designed to develop in students mariachi music skills. Includes an introduction to reading and writing music, history of mariachi music, and an introduction to and maintenance and care of various instruments.

**APD 054 Color Photography /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Processing and printing of color negatives and color slide materials.

**APD 055 Advanced Color Photography /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 054.

Advanced techniques in the printing of color negatives. Includes cibachrome and ektacolor processing techniques, sensitometry in printing color negatives and on-site shooting with the incorporation of studio lighting.

**APD 065 Watercolor I /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Introduction to methods and basic techniques of watercolor painting. Emphasis on the development of imagination and creativity.

**APD 066 Watercolor II /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 065.

Continuation of APD 065. Techniques of painting with water-based media on paper. For beginning and intermediate painters. Personal creativity, color theory and composition are stressed.

**APD 067 Watercolor III /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 065.

Introduction to the fundamentals of landscape painting in water-based media of the student's choice. Includes the use of photos and sketches as starting points for creativity.

**APD 068 Watercolor IV /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 065.

Exploration of design and composition using basic and advanced techniques in water-based media. Includes the stroke technique.

**APD 072 Mariachi Music II /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 051.

Continuation of APD 051. Includes history of the mariachi, types of rhythms, and songs that are indigenous to the culture of Mexico.

**APD 073 Mariachi Music III /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 072.

Continuation of APD 072. Includes basic music and style, keys, relationship of tonality to keys, and rhythmic patterns.

**APD 076 Art Appreciation /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Examination of contemporary art and understanding of the artistic heritage in visual world art. Includes museum and gallery visits, discussion with artists and visits to their studios. Experimental drawing and sculpture done in class.

**APD 077 Mariachi Music IV /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 073.

Continuation of APD 073. Includes history and evolution of mariachi music, ear training, rhythm types, tonality and its application, and vocal training.

**APD 078 Mariachi Music V /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): APD 077.

Continuation of APD 077. Includes music theory, rhythms and patterns, rhythmic applications, advanced tonality application techniques, performance and gesturing techniques, and execution of songs.

## ASTRONOMY

### AST 101 Solar System /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Descriptive and historical introduction to the science of astronomy focusing on the sun and its family of planets. Includes comets, origin of the solar system, the space program and critiques of related pseudosciences, e.g., astrology.

### AST 101LB Solar System Laboratory /1 cr. hr./3 periods (3 lab)

Prerequisite(s): None.

Laboratory for AST 101, involving exercises, star gazing sessions and field trips to planetariums and observatories.

### AST 102 Stars, Galaxies, Universe /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Introduction to the universe beyond the solar system. Includes the nature of light, how astronomers and telescopes work, the possibilities of alien life in the universe, quasars, pulsars and black holes. Also includes the origin, nature and future of the universe.

### AST 102 LB Stars, Galaxies, Universe Laboratory /1 cr. hr./3 periods (3 lab)

Prerequisite(s): None.

Laboratory for AST 102, involving exercises, star gazing sessions and field trips to planetariums and observatories.

### AST 105 Life in the Universe /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

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.

### AST 105LB Life in the Universe Laboratory /1 cr. hr./3 periods (3 lab)

Prerequisite(s): AST 105 or concurrent enrollment.

Laboratory for AST 105 involving observations, experiments and image analysis. Includes scientific and photogeology laboratory exercises, group telescopic observation projects, and personal observation projects.

### AST 296 Independent Study in Astronomy /1-4 cr. hrs./3-12 periods (3-12 lab)

Prerequisite(s): Consent of instructor.

Experience in astronomical research, projects, or topical studies. Specific content to be determined by student and instructor. May be taken three times for a maximum of twelve credit hours.

### AST 298 Advanced Topics in Astronomy: /1-5 cr. hrs./1-10 periods (0-5 lec., 0-10 lab)

Prerequisite(s): Consent of instructor.

Advanced and current topics in astronomy. Includes charge-coupled device (CCD) imaging of planets, photoelectric photometry of variable stars, photography of various celestial objects, and photometry using CCD array. Credit may be earned for each topic taken.

## AUTOMOTIVE TECHNOLOGY

### AUT 089 Small Engine Troubleshooting and Repair /2 cr. hrs./4 periods (1 lec., 3 lab)

Prerequisite(s): None.

Principles and procedures for overhauling, troubleshooting and repairing small engines. Includes safety, engine types and identification, engine operation and maintenance, disassembly and inspection, engine reconditioning and assembly, fuel and ignition system assembly, and mechanical operation and testing.

### AUT 101 Automotive Maintenance /2 cr. hrs./4 periods (1 lec., 3 lab)

Prerequisite(s): None.

Techniques of routine vehicle maintenance. Includes customer vehicle identification and handling, new vehicle predelivery inspection and preparation, safety inspection, lubrication tasks, and light line tasks.

### AUT 105 Light Line Maintenance /3 cr. hrs./7 periods (1 lec., 6 lab)

Prerequisite(s): None.

Principles and procedures for light line service. Includes safety, transmission and driveline systems, brake systems, air conditioning/heating systems, electrical systems, suspension/steering systems, engine performance, and tools and equipment.

### AUT 120 Engine Diagnosis and Repair /3 cr. hrs./7 periods (1 lec., 6 lab)

Prerequisite(s): None.

Techniques for light line engine service. Includes personal and environmental safety, general engine diagnosis, engine in-car repair, lubrication system diagnosis and repair, and cooling system diagnosis and repair.

### AUT 122 Engine Remove and Install /3 cr. hrs./7 periods (1 lec., 6 lab)

Prerequisite(s): None.

Techniques for heavy line engine exchange. Includes personal and environmental safety, front wheel drive engine removal and installation, and rear wheel drive engine removal and installation.

**AUT 124 Automotive Diesel Engine Tune-up /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Maintenance of automotive diesel engines. Includes tune-up, assembly and calibration of fuel injectors, and diagnosis and repair of glow plug electronic control systems.

**AUT 125 Tune-up and Emissions Troubleshooting /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Principles and procedures for diagnosing ignition, fuel, and mechanical control systems. Includes two and four barrel and computerized feedback carburetors, manifold system test and replacement, point and electronic ignition testing, replacement, and adjustment, emissions troubleshooting, timing belt replacement, and duraspark ignition analysis.

**AUT 126 Engine Performance and Driveability Troubleshooting / 3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Diagnosis, service, and repair of computerized engine control systems. Includes turbo-charged and multi-port fuel injection, hall-effect ignition, throttle body injection, General Motors and Bosch sequential injection with distributorless, and direct ignition, and computerized emissions control systems.

**AUT 128 Automotive Electrical Fundamentals and Applications / 3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Principles and procedures of electrical diagnosis and repair. Includes electrical fundamentals and test equipment, electrical system, battery, starting system, charging system, lighting systems, instrumentation, horn and wiper/washer, integrated circuits, and computerized control systems.

**AUT 129 Automotive Electrical Accessories /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Electrical circuit diagnosis, repair, and replacement. Includes electrical fundamentals and test equipment, accessory diagnosis and repair, tilt steering column repair, and electrical connectors and terminal replacement.

**AUT 132 Automatic Drivetrain Removal and Replacement /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Principles and procedures for automatic driveline component exchange. Includes safety, automatic transmission and transaxle, manual drive train, rear axle and drive shaft, and sub-frame assemblies.

**AUT 133 Automatic Transmission/Transaxle Rebuilding /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Principles and procedures for overhaul. Includes safety, automatic transmission rear wheel drive, automatic transaxle front wheel drive, and electronically controlled automatic transmission and transaxle.

**AUT 136 Automotive Manual Transmission and Driveline Service / 3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Principles and procedures for automotive driveline component overhaul. Includes safety, manual transmissions, front and rear axle assemblies, and transfer cases.

**AUT 138 Automotive Suspension and Steering /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None

Principles and procedures for automotive suspension system service. Includes safety, adjustment and repair of front and rear suspension systems, and related suspension component service.

**AUT 139 Automotive Steering and Alignment Systems /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None

Principles and procedures for automotive steering and alignment systems service. Includes safety, manual and power steering systems, wheel alignment diagnosis, adjustment, and repair, and wheel and tire diagnosis and repair.

**AUT 140 Automotive Brakes /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Service, repair, and diagnosis of hydraulic brake systems. Includes disc/drum and disc/disc brakes, hydraulic cylinders, disc brake caliper, machining and fabrication, and rear wheel and four wheel anti-lock brake diagnosis.

**AUT 142 Automotive Air Conditioning /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Diagnosis and repair of automotive air conditioning systems. Includes personal and environmental safety, air conditioning system diagnosis and repair, component diagnosis and repair, heating and engine cooling diagnosis and repair, operating systems and controls diagnosis and repair, and automatic and semi-automatic temperature control performance test.

**AUT 150 Non-Structural Collision Repair: Panel Replacement /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques for replacing automobile non-structural damage. Includes personal and environmental safety, determining needed repairs, hinged component replacement, fixed component replacement, and moveable glass repair/replacement.



**AUT 151 Non-Structural Collision Repair: Panel Straightening /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques for repairing automobile non-structural damage. Includes personal and environmental safety, determining needed repairs, metal straightening, lights, trim, and appliques, and plastic and fiberglass fillers.

**AUT 152 Structural Collision Repair: Cutting and Welding /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques for basic collision repair welding and cutting. Includes personal and environmental safety, vehicle protection measures, cutting and heating processes, and gas metal arc welding.

**AUT 153 Structural Collision Repair: Unibody Measurement and Straightening /3 cr.hrs./7 periods (1 lec., 6 lab.)**

Prerequisite(s): None.

Techniques for repairing unibody structural damage. Includes personal and environmental safety, visual damage assessment, damage measurement and analysis, and straightening structural members.

**AUT 154 Structural Collision Repair: Unibody Components /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): AUT 152.

Techniques for replacing damaged unibody structural components. Includes personal and environmental safety, structural panel sectioning or replacement, stationary glass replacement, and anti-corrosion protection.

**AUT 155 Structural Collision Repair: Alloy Welding Processes / 3 cr. hrs./7 periods (1 lec., 6 lab.)**

Prerequisite(s): AUT 152.

Techniques and processes for collision repair welding. Includes personal environment safety, vehicle protection measures, resistance spot welding, Metal Inert Gas (MIG) aluminum welding, Tungsten Inert Gas (TIG) aluminum welding, and oxyacetylene welding.

**AUT 156 Structural Collision Repair: Body-Over Frame /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Course Prerequisite(s): None.

Techniques for repairing Body-Over Frame (BOF) structural collision damage. Includes personal and environmental safety, BOF damage assessment, measurement, and repair.

**AUT 157 Automotive Collision Repair: Non-Metal Components / 3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques for repair of automotive plastics. Includes personal and environmental safety, plastic identification, adhesive repairs, plastic welding repairs, padded dash repair, Simulated Metal Component repairs, and plastic refinishing.

**AUT 158 Automotive Collision Estimating /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Techniques for developing collision repair estimates. Includes personal and environmental safety, damage analysis, and manual and computer prepared damage reports.

**AUT 160 Automotive Collision Repair: Surface Refinish Preparation / 3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques for preparing automobiles for refinish. Includes personal and environmental safety, finish identification, surface cleaning and preparation.

**AUT 161 Automotive Collision Repair: Paint Mixing and Application / 3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): AUT 160.

Techniques for paint mixing, matching and applying. Includes personal and environmental safety, spray gun and related equipment, paint mixing and matching, paint application on metal, and paint application on plastics.

**AUT 162 Automotive Collision Repair: Solving Paint Application Problems /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques for identifying and correcting paint application problems. Includes personal and environmental safety, surface preparation problems, non-compatible materials/mis-identification, paint mixing problems, and spray techniques and equipment problems.

**AUT 163 Automotive Collision Repair: Refinish Final Detail /3 cr. hrs./ 7 periods (1 lec., 6 lab)**

Prerequisite(s): None.

Techniques to assure vehicle appearance and customer satisfaction. Includes personal and environmental safety, overspray removal, buffing and polishing vehicle refinish, applying accents, and vehicle cleaning.

**AUT 199 Co-op Related Class in AUT /1 cr. hr./1 period (1 lec.)**

See Cooperative Education for description.

**AUT 199 Co-op Work in AUT /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education for description.

**AUT 261 Automotive Service Excellence (ASE) Test Preparation / 1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Field experience or five automotive classes, and instructor permission.

Automotive Service Excellence (ASE) certification test review. Includes engine repair, electrical systems, engine performance, suspension and steering, brakes, air conditioning and heating, automatic transmission and transaxles, manual drive trains and axles, and Automotive Service Excellence test taking strategies.



**AUT 262 Throttle Body Fuel Injection /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Field experience or five automotive classes, and instructor permission.

Diagnosis, service and repair of a throttle body computerized engine control system. Includes engine compartment familiarization, throttle body fuel system, magnetic ignition system, and emission controls.

**AUT 263 Sequential Fuel Injection /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Field experience or five automotive classes, and instructor permission.

Diagnosis, service and repair of sequential computerized engine control systems. Includes engine compartment familiarization, sequential fuel system, distributorless ignition system, and emissions control.

**AUT 264 Engine Overhaul/Rebuild /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): Field experience or five automotive classes, and instructor permission.

Diagnosis, repair, and machining of engine components. Includes personal and environmental safety, overhead valve cylinder head, overhead cam cylinder head, engine block, crankshaft, flywheel, vibration damper, camshaft, bearings, timing mechanisms, connecting rod, and piston assembly.

**AUT 265 Automotive Service Excellence (ASE) Advanced Engine Diagnosis (L1) Test Preparation /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Current ASE - A8 Certification.

Review of the materials and procedures for the ASE L1 test. Includes safety and advanced engine performance diagnosis.

**AUT 266 Advanced Engine Performance and Waveform Analysis / 2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): AUT 126 or consent of instructor.

Theory and diagnosis of computerized engine control systems. Includes safety and hazardous material handling, procedural direction and documentation, four and five gas emission analysis, waveform scope analysis, computer program strategies, alternative diagnostic methods and case studies.

**AUT 297 Automotive Seminar: / .25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Automotive job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**AUT 299 Co-op Related Class in AUT /1 cr. hr./1 period (1 lec.)**

See Cooperative Education for description.

**AUT 299 Co-op Work in AUT /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education for description.

**AVIATION SCIENCE****AVS 110 Aviation Ground School: Private Pilot /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Theory and procedures associated with the ground phase of private pilot training. Includes theory of flight, weather and navigation.

**AVS 115 Aviation Ground School: Private Pilot Refresher /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): AVS 110.

Review of the ground phase of private pilot training. Includes aircraft systems, controlled air space, meteorology, navigation, and the Federal Aviation Regulations.

**AVS 210 Aviation Ground School: Commercial Pilot/Multi-Engine / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): AVS 110 or consent of instructor.

Theory and procedures associated with the ground phase of commercial pilot training/multi-engine. Includes aircraft flight and systems, airspace, weather, navigation, Federal Aviation Regulations (FAR), flight operations, and pilot physiology. Helps prepare the student for the Commercial Pilot FAA written test.

**AVS 230 Aviation Ground School: Instrument Pilot /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): AVS 110 or consent of instructor.

Theory and procedures related to instrument flight. Includes airspace regulations, instrument navigation, aircraft instrumentation, meteorology, and Instrument Flight Rules.

**AVIATION TECHNOLOGY****AVM 088 Preventive Maintenance for Pilots /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Aircraft preventive maintenance principles and procedures for use by pilots. Includes engine design and function, aircraft design and function, operational safety standards, federal aviation regulations and an examination of industry maintenance practices.

**AVM 101 Structural Repair I /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): Concurrent enrollment in AVM 115 or mathematics assessment above MAT 082 recommended.

Structural repair of fuselage, wings and empennage groups. Includes safety, hand, machine, cutting and measuring tools. Also includes layout methods and structural repair processes.

**AVM 102 Structural Repair II /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): AVM 101.

Continuation of AVM 101. Includes safety, bend allowance, layout, fasteners, machine usage, patching techniques and structural repair techniques.

**AVM 105 Aircraft Sheetmetal Repair /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): None.

Principles and procedures for fuselage, wing, and empennage sheetmetal repair. Includes safety, handtools, layout methods, materials, fasteners, repair techniques, parts fabrication, and corrosion prevention and control.

**AVM 110 Aircraft Blueprint Reading /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Aircraft structural repair blueprint reading. Includes measurement tools, drawing and layout equipment, views and projections, types of drawing and reference lines, drawing format, rivet code block, geometric construction and aircraft blueprint interpretation.

**AVM 115 Applied Aircraft Mathematics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Mathematic functions used in structural repair work. Includes whole numbers, fractions, decimals, single numbers, percentages, ratio, measurement of area and volume and trigonometric functions.

**AVM 120 Aviation Electricity /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): None.

Theory and application of direct- and alternating-current electrical systems in aircraft. Includes electron theory, common circuit design, aircraft schematics, and the application of Ohm's Law in troubleshooting aircraft DC and AC electrical systems.

**AVM 123 Airframe Familiarization /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Structure and system functions of aircraft. Includes fuselage, control systems, support systems, ground handling and servicing and publications.

**AVM 130 Aircraft Composite Materials and Repair /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): Consent of instructor.

Construction and 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, assessment of repairs, and repair procedures.

**AVM 150 Structural Repair III /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): AVM 102.

Continuation of AVM 102. Includes repair publications, materials handling, cable fabrication, machining processes, protective coatings, hand forming and structural repair processes.

**AVM 151 Structural Repair IV /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): AVM 150.

Continuation of AVM 150. Includes tube and hose fabrication, locking fasteners, damage classifications and structural repair processes.

**AVM 160 Aircraft Materials and Metallurgy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Characteristics and properties of aircraft structural metals. Includes ferrous and non-ferrous metals, surface treatment, alloying, corrosion control and destructive and non-destructive testing.

**AVM 165 Aircraft Hardware and Fasteners /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Aircraft structural repair hardware and fasteners. Includes specifications and standards, types, control linkages, tubing, hose and packings.

**AVM 170 Aircraft Powerplant Familiarization /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Aircraft powerplant functions and systems. Includes reciprocating and turbine engine powerplants, requirements, hazards and safety, nacelles, cowlings, pylon and mounting systems and foreign object damage.

**AVM 203 Structural Repair V /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): AVM 151, 160.

Continuation of AVM 151. Includes jiggging, shoring and alignment, corrosion and heat treatment and structural repair processes.

**AVM 204 Structural Repair VI /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): AVM 203.

Continuation of AVM 203. Includes sealants and sealant applications, heat treatment, plastics and plastic repairs and structural repair processes.

**AVM 210 Advanced Composite Aircraft Repair I /5 cr. hrs./7 periods (4 lec., 3 lab.)**

Prerequisite(s): AVM 204.

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.

**AVM 220 Airframe Structures /6 cr. hrs./8 periods (4 lec., 4 lab)**

Prerequisite(s): 30 months of experience, concurrently performing the duties of airframe and power plant maintenance, or 18 months of experience performing the duties appropriate to this rating.

Principles and techniques of maintaining, repairing and building airframe structures. Includes federal aviation regulations, aerodynamic principles, assembly and rigging, weight and balance, woodworking techniques, welding and metallurgy, fabric coverings, aircraft finishes and structural repair.

**AVM 221 Airframe Systems and Components /6 cr. hrs./8 periods (4 lec., 4 lab)**

Prerequisite(s): 30 months of experience, concurrently performing the duties of airframe and power plant maintenance, or 18 months of experience performing the duties appropriate to this rating. Theory of operation, repair and maintenance of various aircraft systems and components. Includes direct current electrical systems, repair and troubleshooting, hydraulic and pneumatic systems, aircraft instrumentation, communication and navigation systems, air conditioning and pressurization, fire detection and extinguishing systems, and aircraft fuel systems.

**AVM 230 Power Plant Mechanics /6 cr. hrs./8 periods (4 lec., 4 lab)**

Prerequisite(s): 30 months of experience, concurrently performing the duties of airframe and power plant maintenance, or 18 months of experience performing the duties appropriate to this rating. Repair and maintenance of aircraft power plants. Includes reciprocating and gas turbine engines, theory of operating construction, overhaul procedures, lubrication systems, fuel metering systems, ignition systems, propellers and engine testing.

**AVM 250 Structural Repair VII /4 cr. hrs./10 periods (1 lec., 9 lab)**

Prerequisite(s): AVM 210. Simulated industry repair performance. Includes quality assurance, required paperwork and repairs to aircraft structures.

**AVM 260 Advanced Composite Aircraft Repair II /4 cr. hrs./10 periods (1 lec., 9 lab.)**

Prerequisite(s): AVM 250. 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.

**AVM 297 Aviation Seminar: /.25-4 cr. hrs./25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor. Aviation job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**BIOLOGY**

**BIO 083 Oceanus: Marine Environment /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. The marine environment as a unique feature of the planet Earth. Includes the formation of oceans, world-wide weather patterns, life forms in ocean environments from the intertidal zone to deep-sea rifts, the status of dolphins and whales and the future of the oceans in relation to the human species.

**BIO 098 Topics in Biology: /.25-4 cr. hrs./25-12 periods (.25-4 lec., 1-12 lab)**

Prerequisite(s): Consent of instructor. Selected topics in biology and related technologies. Includes current trends and developments, career opportunities, and special applications. Credit may be earned for each topic taken.

**BIO 100 Biology Concepts /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None. Basic principles and concepts of biology. Includes methods of scientific inquiry, cell structure and chemistry, metabolism, reproduction, genetics, evolution, and ecology.

**BIO 105 Environmental Biology /4 cr. hrs./6 periods (3 lec., 3 lab.)**

Prerequisite(s): None. 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.

**BIO 109 Natural History of the Southwest /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None. Study of the common plants and animals of the Southwest. Includes their distribution, adaptation, behavior and ecology. Also includes physical geography and geological principles of the region.

**BIO 115 Wildlife of North America /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None. 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.

**BIO 127 Human Nutrition and Biology /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None. 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. Emphasizes laboratory experience that utilizes current technologies in the

study of nutritional biochemistry and biochemistry-based nutritional assessment. (Same as FSN 127.)

**BIO 156 Human Biology for Allied Health /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Introduction to biology for the health professions. Includes basic chemistry of life, cell and tissue structure and function, and patterns of inheritance.

**BIO 160 Introduction to Human Anatomy and Physiology /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Structure and dynamics of the human body. Includes basic biological concepts, major structures and function of skeletal, muscular, cardiovascular, respiratory, urinary, digestive, nervous, endocrine, and reproductive systems. For students who require a one semester lab science course in anatomy and physiology.

**BIO 181 General Biology (Majors) I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Equivalent of one semester college chemistry. Assessed placement at MAT 122 and REA 091.

Principles of structure and function of living things at the molecular, cellular and organismic levels of organization. Includes scientific process; chemistry of the cell; cell structure, function, and reproduction; inheritance; molecular biology and biotechnology.

**BIO 182 General Biology (Majors) II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BIO 181 or consent of instructor.

Additional principles of structure and function of living things at molecular, cellular, organismic and higher levels of organization. Includes evolution, classification and diversity of organisms, structure and function of organisms, and ecology.

**BIO 183 Marine Biology /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

A survey of marine environments and their biotic communities with emphasis on the natural history of marine organisms (from sponges to whales). Lab work included. Field trip required.

**BIO 184 Plant Biology /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Study of principles and processes in plant biology with emphasis on vascular plants. Includes survey of plant kingdom.

**BIO 197 Introduction to Biological Research /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the methods of research in biology. Includes scientific laboratory procedures, experimental design, scientific writing, bioethics, and current research in working laboratories.

**BIO 198 Special Topics: /1-4 cr. hrs./1-10 periods (1-4 lec., 0-9 lab)**

Prerequisite(s): None.

Special and current topics in biology. Credit may be earned for each topic taken.

**BIO 201 Human Anatomy and Physiology I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BIO 156 with a grade of "C" or better or a passing grade on the biology assessment test.

Structure and function of the body. Includes cells, tissues, membranes, and the integumentary, skeletal, muscular, and nervous systems.

**BIO 202 Human Anatomy and Physiology II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BIO 201 with a grade of "C" or better.

Continuation of BIO 201. Includes the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

**BIO 204 Survey of Human Diseases /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): An introductory anatomy and physiology course or equivalent.

Examination of disease processes and their effects on the systems of the human body. Primarily for students in the health occupation programs, but also open to students who wish to take a lab-science course.

**BIO 205 Microbiology /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): One semester of a biological science.

Study of microorganisms and their relationship to health, ecology, and related fields. Includes classification, metabolism, microbial control, and immunity. Also includes an overview of viruses and the pathogenic fungi.

**BIO 295 Independent Research in Biology /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): One semester of biology and consent of instructor.

Experience in scientific laboratory or field research. Specific content to be determined by student and instructor. May be taken three times for a maximum of twelve credit hours.

**BIO 296 Special Projects /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): One year of biology.

Exploration of special interest areas. Content to be determined by student and facilitator/instructor. May be taken two times for a maximum of eight credit hours.

**BUILDING AND CONSTRUCTION TECHNOLOGIES****BCT 060 Building and Construction Technologies Pre-Vocational Mathematics /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Developmental mathematics for vocational programs. Includes whole numbers, decimals, common fractions, and improper fractions.

**BCT 070 Building Technology Career Opportunities /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Consent of instructor.

Introduction to the careers involved in maintaining the infrastructure of commercial, industrial, and residential buildings. Includes anatomy of a building, hand tools, environmental issues, electrical and mechanical systems in a building, utility conservation, and field trips.

**BCT 081 Building and Construction Technologies Pre-Vocational HVAC-R /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Elementary principles and concepts for heating, ventilating, air conditioning, and refrigeration (HVAC-R). Includes basic physics theories, major components, and equipment accessories.

**BCT 101 Principles of Construction /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the construction industry. Includes terminology and concepts of projects, regulations, structural systems, environmental control, and bidding.

**BCT 102 Building Materials /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Construction standards and specific types of building materials used in commercial, industrial and private construction projects. Includes industrial and local area standards and properties of material (wood, concrete, masonry and other standard construction materials).

**BCT 103 Principles and Concepts for HVAC-R /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 060 or concurrent enrollment or satisfactory score on mathematics assessment test.

Basic air conditioning and refrigeration fundamentals. Includes air conditioning and refrigeration cycle, measuring temperature and pressures, mechanical refrigeration cycle, types of systems, compressors, condensers, evaporators, metering devices, controls, refrigeration cycle accessories, and refrigeration service techniques.

**BCT 104 Introduction to Equipment Maintenance /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

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.

**BCT 106 Soldering and Brazing for Building and Construction Technologies /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): None.

Principles and techniques of joining different types of alloys by braze welding and soldering. Includes safety and health, procedures and design, precleaning and surface preparation, filler metals, fluxes and atmospheres, torch brazing, pipe and tube, copper, and cast iron.

**BCT 111 Basic Safety /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Overview of safety rules and procedures for working on construction sites. Includes general and company safety policies, construction site job hazards and procedures, and personal protective equipment needs and uses. Also includes lifting, ladder and scaffold procedures, hazards, communications requirements, and fire and electrical safety guidelines.

**BCT 112 Basic Construction Mathematics /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Addition, subtraction, multiplication and division of whole, decimal and fractional numbers. Includes percents, metric system, and use of calculators.

**BCT 113 Hand and Power Tools /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Selection, use, maintenance and safety procedures for common hand and power tools. Includes applications to specific jobs in the construction industry.

**BCT 114 Blueprint Reading /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Basic concepts of blueprints, including terms and symbols, grid line systems and blueprint production techniques. Includes dimensions and blueprint reading.

**BCT 115 Basic Rigging /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Rigging safety, equipment and inspection. Includes crane hand signals, common rope knots, types of derricks and cranes and safety procedures for rigging and moving materials and equipment.



**BCT 116 Occupational Safety and Health Administration Safety Training for Building and Construction Technologies /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Introduction to Occupational Safety and Health Administration (OSHA) standards, inspection procedures, and consultation services. Includes OSHA safety and training programs, safety procedures, rigging procedures, and confined space procedures. Open only to students enrolled in the Building and Construction Technologies program.

**BCT 118 Building and Construction Technologies Applied Mathematics I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BCT 060 or satisfactory score on the mathematics assessment test at MAT 086 or higher.

Practical mathematics as applied to Building and Construction Technologies. Includes calculator operations, problem solving techniques, estimating, English and metric measurement, graphs and tables, using data, straight lines and angles, two and three dimension shapes, ratio and proportion, scale drawings, signed numbers and vectors, scientific notation, precision accuracy and tolerance, powers and roots, formulas, and linear equations.

**BCT 119 Building and Construction Technologies Applied Mathematics II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BCT 118.

Continuation of BCT 118. Includes graphical data, nonlinear equations, statistics, probabilities, right triangle relationships, trigonometric functions, factoring, relationships and functions, quadratic equations, systems of equations, inequalities, applied geometry, computer spreadsheets, computer graphics, and quality control.

**BCT 120 Blueprint Reading for Construction /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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.

**BCT 121 Introduction to the Building Trades /3 cr. hrs./5 periods (1 lec., 4 lab)**

Prerequisite(s): None.

Introduction to residential and commercial construction. Includes safety, site layout, plumbing, electrical, masonry, and carpentry. Students must have transportation to selected job sites.

**BCT 122 Residential Construction /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Principles and procedures of residential construction. Includes safety, foundations, wall and roof construction, electrical, plumbing, mechanical, and interior/exterior finishing.

**BCT 123 Concrete/Masonry /3 cr. hrs./5 periods (1 lec., 4 lab)**

Prerequisite(s): None.

Principles and techniques of masonry construction. Includes preparation, composition, protection, placement and curing of concrete, mortar and plaster. Also includes construction using brick, concrete block and stone.

**BCT 124 Gas Furnace Heating /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Theories and concepts for gas furnace installation and operation. Includes principles of gas combustion, gas furnaces, gas burners, gas controls, gas ignition systems, safety and operating controls, gas furnace installation practices, ventilation and combustion air, and gas furnace troubleshooting.

**BCT 125 Electrical Theory and Applications /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Electrical theory, circuits, and components for systems found in buildings. Includes basic electricity, meters, circuit analysis, direct current, alternating current, voltages, inductors, capacitors, transformers and impedance.

**BCT 126 HVAC Electricity, Circuitry, and Controls /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 103 or concurrent enrollment.

Electrical theory, circuits and components for air conditioning systems. Includes basic electricity, meters, circuit analysis, alternating current and voltage, electric motors and components, installation of HVAC systems, motor controls, control devices, National Electrical Code, control systems circuitry, and troubleshooting.

**BCT 127 HVAC Systems Applications /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 103 or concurrent enrollment.

Principles and procedures of air conditioning and heating systems. Includes tools, controls, system charging, evaporative cooling, gas/oil/electric heating, heat pumps, and load calculation.

**BCT 128 HVAC Systems Service and Repair /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 127.

Repair of air conditioning and heating equipment. Includes refrigerants, system evacuation and charging, water cooled systems, controls, operating conditions, troubleshooting, and Air Conditioning and Refrigeration Institute (ARI) Residential or Light Commercial certification.

**BCT 130 EPA Clean Air Act: Section 608 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): BCT 103.

Freon certification preparation. Includes basics of refrigerant bearing equipment, ozone depletion and the new legislation, technician categories covered, and the certification examination.



**BCT 135 National Electrical Code Wiring Applications /4 cr. hrs./ 6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 125.

Electrical wiring and installation conforming to National Electrical Code requirements. Includes grounded systems, requirements for overcurrent protection of conductors, ampacity criteria, installing overcurrent protection of conductors, installing services, installing motors and transformers, and remote control and signaling circuits.

**BCT 150 Facilities Maintenance: Plumbing /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

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.

**BCT 161 Residential and Industrial Plumbing I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Building and Construction Technologies Department approval.

Theories and concepts for plumbing, pipe fitting, and the National Plumbing Code. Includes physics for plumbers and pipe fitters, plumbing materials, water supplies, drainage, and sewage disposal.

**BCT 162 Residential and Industrial Plumbing II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 161.

Continuation of BCT 161. Includes pipe joint connections, pipe fittings, rough-in, valves and faucets, and fixtures.

**BCT 163 Residential and Industrial Plumbing III /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 162.

Continuation of BCT 162. Includes water installation practices, plumbing calculations, sewerage installations, and blueprint reading.

**BCT 164 Residential and Industrial Plumbing IV /4 cr. hrs./6 periods (3 lec., 3 lab)**

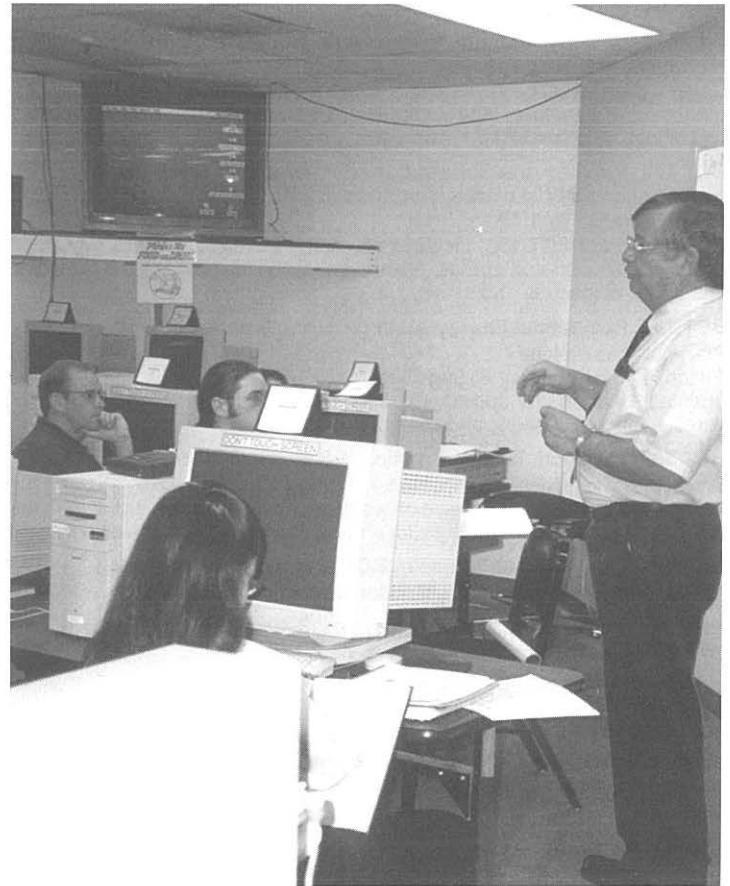
Prerequisite(s): BCT 163.

Continuation of BCT 163. Includes venting installation practices, properties of water, and rigging and hoisting.

**BCT 171 Building and Construction Technologies Electrical Apprenticeship I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Building and Construction Technologies Department approval.

Theories and concepts for electricity and the National Electric Code. Includes safety, hand and power tools, print reading, and rigging.

**BCT 172 Building and Construction Technologies Electrical Apprenticeship II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 171.

Continuation of BCT 171. Includes safety, conduit systems, electrical theory, test equipment, print reading, and wiring applications.

**BCT 173 Building and Construction Technologies Electrical Apprenticeship III /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 172.

Continuation of BCT 172. Includes alternating current, motor installation, grounding of structures and equipment, conduit bending, electrical boxes and fittings, and conductor installations.

**BCT 174 Building and Construction Technologies Electrical Apprenticeship IV /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 173.

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.

**BCT 185 Residential Energy Audit /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Arizona's Home Energy Rating System (HERS) Program. Includes energy auditing, heat energy and energy loss, conservation practices and measures, finance and sales, and computer modeling.

**BCT 190 Fieldwork for Construction /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): Consent of instructor.

Supervised fieldwork experience on a specific construction project at the project site. May be taken four times for a maximum of thirty-two credit hours.

**BCT 199 Co-op Related Class in BCT /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**BCT 199 Co-op Work in BCT /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**BCT 201 Cost Estimating /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BCT 102, MAT 110 or higher.

Principles of cost estimating. Includes specifications, site work, concrete, steel, masonry, electrical, piping, carpentry and alteration take-offs, job overhead, subcontractor's bids, and pricing.

**BCT 202 Construction Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Construction management procedures. Includes analysis of the general provisions of contracts and review of material submittals.

**BCT 203 Soils and Materials Testing /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): BCT 102, MAT 110.

Evaluation of construction materials of earth, concrete, mortar, block, and steel. Includes soil relationships, strength testing, and use.

**BCT 204 Construction Surveying /3 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): BCT 118 or equivalent.

Principles and techniques of construction surveying. Includes taping, levelling, transit, contour and topographic mapping, and construction surveying.

**BCT 205 Supervisory Techniques for Foremen /1 cr. hr./1 period (1 lec.)**

Prerequisite: None.

Principles and procedures required of foremen on construction sites. Includes human relations, problem solving, decision making, safety, planning, estimating, scheduling, cost awareness and control, and resource control.

**BCT 211 Leadership and Motivation /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles of leadership and motivation for supervisors in the construction industry. Includes the needs of leaders and followers, goal setting, communication, example setting, coaching on the job, leadership and commitment and being in control.

**BCT 212 Oral and Written Communication /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Oral and written communication for supervisory training in the construction industry. Includes positive direct communication, combining oral and written communication, helping other people communicate, listening, understanding, negotiation and getting the point across.

**BCT 213 Problem Solving and Decision-Making /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Problem solving and decision-making techniques for supervisory training in the construction industry. Includes problem prevention, identifying problems, strategies for solving scheduling, technical and performance problems, barriers to developing creative solutions, creative problem solving, establishing a problem solving atmosphere, gauging solution effectiveness and selecting alternative solutions.

**BCT 214 Contract Documents /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

An examination of contract documents as they relate to supervisory training in the construction industry. Includes primary and secondary documents, regulation and design standard documents, document information and construction decisions, authority on a project, the supervisor as an agent of the contractor and contract documents in perspective.

**BCT 215 Planning and Scheduling /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Planning and scheduling techniques for supervisory training in the construction industry. An introduction to scheduling techniques such as bar charts, precedence diagramming, arrow diagramming, critical paths and networks. Also includes three phases of planning and scheduling.

**BCT 216 Cost Awareness and Production Control /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Cost awareness and production control techniques for supervisory training in the construction industry. Includes cost control cycle, bidding procedures and estimate, work and cost analysis, production scheduling, cost reporting, production control, and project debriefing and evaluation.

**BCT 217 Project Safety and Loss Prevention /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

An overview of project safety and loss prevention as they relate to supervisory training in the construction industry. Includes communication and motivation, reference material and advisory sources, security and traffic control, techniques used to prevent losses, assignment of responsibility, equipment inspection and maintenance, inclement weather and emergencies, and government regulation and inspections.

**BCT 218 Project Management /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Project-management techniques for supervisory training in the construction industry. Includes preconstruction planning, cost and risk control, policies and procedures, purchasing and receiving, subcontractor management, project layout and project start up and close out.

**BCT 219 Construction Law: Changes, Claims, and Negotiations / 1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Changes, claims and negotiations as they pertain to construction law in supervisory training in the construction industry. Includes chain of contracts and contract risk, clauses, negotiation, documentation, liens, bonds and closing out the job.

**BCT 220 Productivity Improvement /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Productivity improvement techniques for supervisory training in the construction industry. Includes productivity, planning, communication, motivation, evaluation, analysis techniques, time lapse film techniques and methods improvement program.

**BCT 222 Commercial HVAC Systems /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 128 or appropriate field experience.

Principles and components for commercial air conditioning and heating systems. Includes types and functions, refrigeration systems, chilled water systems, distribution systems, calculations and formulas, and troubleshooting and service.

**BCT 223 Pneumatic HVAC Controls /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): BCT 222 or appropriate field experience.

Pneumatic controls for HVAC systems. Includes major components, controlled devices, relays, thermostats and calibration.

**BCT 225 Electrical Distribution and Motor Controls for Buildings / 4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 126.

Theory and troubleshooting of complex electrical distribution and motor circuitry found in commercial and industrial buildings. Includes plant power distribution, static and manual controls, sensing and timing controls, electromagnetic control switches, electrical control switches, alternating current and direct current motors and motor control circuits, preventative maintenance, troubleshooting, and programmable logic controllers.

**BCT 242 Cross-Connection Control /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): BCT 150, or ENV 102, 103.

Protection of potable water systems back flow. Includes theory of cross-connection control, regulations, plumbing codes, inspector and tester responsibilities, and repair and testing of backflow assemblies. Emphasis is placed on assembly testing, troubleshooting and repair. Helps prepare students for the State Certification Exam. (Same as ENV 242.)

**BCT 261 Residential and Industrial Plumbing V /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 164.

Continuation of BCT 164. Includes residential, commercial, industrial, and institutional fixtures and appliances, fittings and trim, national fuel gas code, fuel gas piping materials, types of fuel gases and their properties, fuel gas pipe sizing, installation techniques, gas appliances, regulations, meters and controls, corrosion and corrosion protection, elevations, slopes and grades, venting materials and vents used for gas appliances, fuel gas combustion and controls, and offsets and their uses.

**BCT 262 Residential and Industrial Plumbing VI /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 261.

Continuation of BCT 261. Includes storm drainage, sizing storm drains, pipe expansion, energy, temperature, heat and insulation procedures, heat transfer in gas, oil, electric, and solar water heaters; stratification, multiple heaters, and recirculation; water treatment and methods, electricity theory, electric circuit troubleshooting, humidity and condensation, plan overview and specifications, and drawing types.

**BCT 263 Residential and Industrial Plumbing VII /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 262.

Continuation of BCT 262. Includes repair and service of plumbing installations and pipe sizing.

**BCT 264 Residential and Industrial Plumbing VIII /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 263.

Continuation of BCT 263. Includes waste systems, potable water systems, heating systems, and energy conservation methods.

**BCT 271 Building and Construction Technologies Electrical Apprenticeship V /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 174.

Continuation of BCT 174. Includes distribution equipment, distribution system transformers, electricity in HVAC systems, overcurrent protection, conductor selection and calculations, raceway, box and fitting, and fill requirements.

**BCT 272 Building and Construction Technologies Electrical Apprenticeship VI /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 271.

Continuation of BCT 271. Includes wiring devices, motor controls, motor calculations, motor maintenance, and hazardous locations.

**BCT 273 Building and Construction Technologies Electrical Apprenticeship VII /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 272.

Continuation of BCT 272. Includes high voltage terminations/splices, load calculations, electric theory, specialty lighting, and advanced motor maintenance.

**BCT 274 Building and Construction Technologies Electrical Apprenticeship VIII /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BCT 273.

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.

**BCT 280 Uniform Building Code for Building and Construction Technologies I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Uniform Building Code for Building Technology applied to new construction and major remodeling. Includes building structures, types of building construction, fire protection systems, and means of egress.

**BCT 281 Uniform Building Code for Building and Construction Technologies II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BCT 280.

Continuation of BCT 280. Includes building accessibility, structural forces, electrical systems, mechanical systems, and plumbing systems.

**BCT 282 Uniform Mechanical Code with City and County Amendments for Building and Construction Technologies /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and regulations developed for the electrical, HVAC, pipe fitting, plumbing, sheet metal and facilities maintenance occupations. Includes terminology, ventilation air supply, exhaust systems, duct systems, combustion air, chimneys and vents, special fuel-burning and energy-utilizing equipment, boiler/water heaters, refrigeration, panel and hydronic panel heating system, fuel gas piping, special piping and storage systems, solar systems and workmanship standards.

**BCT 283 Uniform Plumbing Code for Building and Construction Technologies /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and regulations developed for the plumbing and facilities maintenance occupations. Includes terminology, plumbing fixtures, water heaters, water supply and distribution installation, sanitary drainage system installation, special waste, vent and trap requirements, storm drainage, and fuel piping.

**BCT 284 National Electric Code for Building and Construction Technologies I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Theory and application of electrical wiring and equipment installation standards. Includes general electrical theory, service, feeders, branch circuits, calculations for dwelling type occupancies, and electrical circuit design for commercial and industrial occupancies.

**BCT 285 National Electric Code for Building and Construction Technologies II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BCT 284.

Continuation of BCT 284. Includes installation rules for specific circuits or systems, installation of general circuits and equipment, installation rules for distribution equipment, and special equipment and occupancies.

**BCT 296 Independent Study in Building and Construction Technologies /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): Consent of instructor.

Independent readings or special projects. Content to be determined by conference between student and instructor.

**BCT 297 Building and Construction Technologies Seminar: / .25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Building and Construction Technologies job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**BCT 299 Co-op Related Class in BCT /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**BCT 299 Co-op Work in BCT /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**BUSINESS****BUS 100 Introduction to Business /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of fundamental characteristics and functions of modern business. Business principles, marketing, record keeping, risks, and an historical review of business development, including the viewpoint of various ethnic groups.

**BUS 105 Survey of Microcomputer Uses /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Study of microcomputer application packages. Includes operating system commands, word processing, spreadsheet and database applications. Not for programmer/analyst or engineering majors. (Same as ARC 105 and CSC 105.)

**BUS 151 Mathematics of Business /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 082 or satisfactory assessment test score.

Fundamental mathematical procedures designed for practical utility in the business environment. Includes payroll, bank records, purchasing, sales, consumer credit, insurance, taxes, interest, inventory, depreciation, stocks and bonds, financial statements, and introductory statistics.

**BUS 200 Business Law I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and sources of business law. Law of contracts, torts, agency consumer credit protection and sales. Includes an overview of the judicial system.

**BUS 201 Business Law II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 200.

Continuation of BUS 200, including the law of personal property, real property, partnerships, corporations, government regulation of business and environmental law.

**BUS 205 Statistical Methods in Economics and Business /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 172.

Introduction to statistical concepts and methods of business. Includes data collection, data description, inference, decision making, problem solving,

prediction, and analyzing variation in economic and business systems. Also includes sampling techniques, methods of data description, sampling distributions, point and interval estimation on population mean and proportion, hypothesis testing about population mean and proportion, linear regression and correlation, chi-square tests, attribute and variables control charting.

**BUS 210 International Business /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to international business, focusing on the environmental and strategic complexities that arise when business activities transcend international borders. Includes the language of international business and the basic do's and don'ts within various foreign business societies.

**BUS 220 Legal Environment of Business /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Legal and social environment of business. Includes an introduction to law, public and private law, business formation and business and government regulation.

**CHEMISTRY****CHM 080 Preparation for General Chemistry /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 092.

Fundamentals of chemistry. Includes nomenclature, atomic structure, bonding, chemical equations, moles, stoichiometry, the periodic table, conversions, problem-solving techniques and study skills. Designed to prepare students for CHM 151.

**CHM 098 Topics in Chemistry /.25-4 cr. hrs./ .25-16 periods (.25-4 lecture., 1-12 lab)**

Prerequisite(s): Consent of instructor.

Selected topics in chemistry, general sciences, and related technologies. Includes current trends and developments, career opportunities, and special applications. Credit may be earned for each topic taken.

**CHM 121 Introductory Chemistry /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): None.

Basic chemistry and its relationship to everyday experiences. Designed to meet the needs and interests of non-science majors, education majors, and general public. Includes classification and structure of matter, basic principles of chemical reaction and their environmental and societal impact.



**CHM 122 Introductory Organic and Biochemistry /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): CHM 121.

Continuation of CHM 121. Organic chemistry as it relates to consumer products and pollution of our environment. Includes biochemistry and physiochemistry and their relationship to medicines, drugs, health and food products.

**CHM 130 Fundamental Chemistry /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): None.

Inorganic chemistry as a basis for the study of some life processes. Includes the classification, structure and general chemical behavior of inorganic matter. Adapted to the needs of students in allied health programs.

**CHM 140 Fundamental Organic and Biochemistry /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): CHM 130, high school chemistry within the last three years or consent of instructor.

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. Adapted to the needs of students in nursing and other allied health programs.

**CHM 151 General Chemistry /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): MAT 122 and CHM 080 or CHM 130 with a grade of C or better, or placement on the chemistry assessment at the CHM 151 level.

Basic chemistry for science majors. Includes examination of atomic structure and bonding with some historical background, fundamental chemical and scientific relationships, chemical reactions and energy, states of matter and solutions.

**CHM 152 General Chemistry II /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): CHM 151.

Continuation of CHM 151 with emphasis on certain chemical concepts such as equilibrium, kinetics, acids, bases, complex ions and oxidation-reduction.

**CHM 195 Introduction to Research in Chemistry /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Consent of instructor.

Introduction to the methods of research in chemistry. Includes scientific laboratory procedures, experimental design, scientific writing, scientific ethics, and current research in working laboratories.

**CHM 196 Independent Studies in Chemistry /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): None.

Laboratory projects varying with students' interests and reasons for enrolling.

**CHM 198 Special Topics in Chemistry: /1-4 cr. hrs./1-10 periods (1-4 lec., 0-9 lab)**

Prerequisite(s): Consent of instructor.

Introduction to the techniques of laboratory research in chemistry. Includes topics concerned with scientific laboratory procedures, experimental design, ethics, and current research in working laboratories.

**CHM 235 General Organic Chemistry I /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): CHM 152.

Fundamentals of organic chemistry, including classification, occurrence, synthesis, analysis and reaction mechanisms of important classes of organic compounds. Alkanes, aromatics and arenes are classes stressed.

**CHM 236 General Organic Chemistry II /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): CHM 235.

Continuation of CHM 235 with emphasis shifting to synthesis and the use of chemical and instrumental methods as a means of identification. The remaining classes of organic compounds are discussed.

**CHM 295 Independent Research in Chemistry /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): One semester of chemistry and consent of instructor.

Experience in scientific laboratory research. Specific content to be determined by student and instructor. May be taken three times for a maximum of twelve credit hours.

**COMMUNICATION GRAPHICS**

**CGR 020 Basic Macintosh for Computer Graphics /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the Macintosh computer environment. Includes operating system, techniques, document file, hardware, and disks.

**CGR 100 Basic Drawing /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): None.

Basic fundamentals of drawing. Includes perspective, light sources, form, and texture.

**CGR 101 Color Rendering /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 100.

Essentials of drawing in color using markers and other media. Includes wood products, food, paper, glass, metallic, landscape, and cloth items.



**CGR 110 Visual Communication /3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): None.

Layout and design for the visual communications fields. Includes layout and design techniques for print, terminology and procedures, occupations, and job securement procedures.

**CGR 111 Typography /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 110 or concurrent enrollment.

Letter forms and use in visual communications. Includes type rendering, letter spacing, type and headline groupings, type relationships, type images, and type applications.

**CGR 112 Graphic Design I /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 110, 111.

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.

**CGR 120 Applied Computer Graphics /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): None.

Introduction to current computer graphics software. Includes desktop publishing, postscript illustration, painting or photo editing, computer graphics hardware, and professional environment.

**CGR 121 Desktop Publishing for Communication Graphics: PageMaker /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 020 or 120, or experience in computer graphics.

Layout, graphics, and typography on a computer system. Includes computer basics, current PageMaker software, computer graphics hardware, documents, and professional environment.

**CGR 122 Desktop Graphics: Adobe Illustrator /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 020 or 120, or experience in computer graphics.

Computer generated graphics and illustrations. Includes current Adobe Illustrator software, computer graphics hardware, documents, and professional environment.

**CGR 130 Production Techniques and Processes I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 121 or 220, MAT 082 or equivalent or concurrent enrollment.

Preparation of artwork for printing. Includes inking, paste-up, stat preparation, type ordering, and spot color separation.

**CGR 140 Illustration I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 101, 201.

Basic principles and methods of illustration. Includes subject, media, techniques, composition, and professional environment.

**CGR 142 Airbrush Techniques I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 100.

Introduction to the use of the airbrush. Includes airbrush operation, retouching, illustration, tools and materials, techniques, and professional environment.

**CGR 145 Cartooning I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Introduction to cartoon drawing styles, techniques, and applications. Includes drawing in a loose manner, designing characters, developing cartoon ideas, materials and techniques, various applications, and developing a personal style.

**CGR 199 Co-op Related Class in CGR /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): CGR 112, 210, 211.

Co-requisite(s): Concurrent enrollment in CGR Co-op Work.

See Cooperative Education section for description.

**CGR 199 Co-op Work in CGR /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): CGR 112, 210, 211.

Co-requisite(s): Concurrent enrollment in CGR Co-op Related Class.

See Cooperative Education section for description.

**CGR 201 Figure Drawing I /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 100.

Drawing the human head, hands and features. Includes eyes, mouth, nose, hair, full head, and hands.

**CGR 202 Figure Drawing II /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 201.

Continuation of CGR 201. Includes proportions, anatomy, toning, and body positioning and movement.

**CGR 203 Figure Drawing III /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 202.

Continuation of CGR 202. Includes advanced anatomy, toning, body positioning and movement, and the clothed body.

**CGR 210 Graphic Design II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 112.

Continuation of CGR 112. Includes ads, billboard, logos, posters, brochures, quick ads/flyers, and other mediums.

**CGR 211 Graphic Design III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 210.

Continuation of CGR 210. Includes advanced work on ads, billboards, logos, posters, brochures, quick ads/flyers, and other mediums.

**CGR 212 Graphic Design IV /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 211.

Continuation of CGR 211. Includes additional work on ads, billboards, logos, posters, brochures, quick ads/flyers, and other mediums.

**CGR 213 Package Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 112.

Procedures and techniques for creating wrapper and container comprehensives. Includes layout, packaging, construction techniques, mock-ups and the professional environment.

**CGR 214 Communication Graphics Business and Portfolio /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): CGR 112.

Business techniques for the communication graphics industry. Includes designer/client relationship, fee structures for designer services, documenting time, portfolio development, and advertising and promotion.

**CGR 220 Desktop Publishing for Communication Graphics:**

**QuarkXpress /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 020 or 120, or experience in computer graphics.

Design and creation of publications on a personal computer system. Includes current QuarkXpress software, documents, hardware, and professional environment.

**CGR 221 Photo Image Editing: Adobe Photoshop /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 020 or 120, and 122, or experience in computer graphics.

Computer retouching and manipulation of photos and illustrations. Includes current Adobe Photoshop software, edit and retouch, hardware, and professional environment.

**CGR 222 Advanced Photo Image Editing: Adobe Photoshop /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 221.

Continuation of CGR 221. Includes advanced techniques using current Adobe Photoshop software, hardware, documents, and professional environment.

**CGR 223 Computer Painting /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 101.

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.

**CGR 224 Desktop Graphics: Macromedia Freehand /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 020 or 120.

Computer generated graphics and illustrations. Includes current Macromedia Freehand software, documents, computer graphics hardware, and professional environment.

**CGR 230 Production Techniques and Processes II /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 122, 130, 221.

Continuation of CGR 130. Includes keyline, spot color separation, tints and screens, reverse headlines, bleeds, brochure preparation, photo manipulation, position stats, amberlith overlays, and the computer as a production tool.

**CGR 231 Production Techniques and Processes III /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 230.

Continuation of CGR 230. Includes newspaper ad production, keylining, amberlith cutting, working environment, photographic special effects, and the computer as a production tool.

**CGR 232 Production Techniques and Processes IV /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 231.

Continuation of CGR 231. Includes complex color printing, multiple software use, specialty production jobs, and working environment.

**CGR 240 Illustration II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 140.

Continuation of CGR 140. Includes advanced subjects, advanced media, advanced techniques, advanced composition, and professional environment.

**CGR 241 Illustration III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 240.

Continuation of CGR 240. Includes advanced media techniques, individual styles, media applications, pre-press applications, and portfolio preparation.

**CGR 242 Airbrush Techniques II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 142.

Continuation of CGR 142. Includes airbrush operation, color, illustration, and professional environment.

**CGR 243 Airbrush Techniques III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 242.

Continuation of CGR 242. Includes additional applications, retouching, style, illustrations, and professional environment.

**CGR 244 Airbrush Techniques IV /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 243.

Continuation of CGR 243. Includes specialization, techniques, and professional environment.

**CGR 245 Cartooning II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 145.

Continuation of CGR 145. Includes applying cartooning skills to various disciplines, designing additional characters, additional cartoon ideas, additional materials and techniques, complex applications, and a marketable personal style.

**CGR 246 Cartooning III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): CGR 245.

Continuation of CGR 245. Includes applying cartooning skills into additional disciplines, designing additional characters, additional cartoon ideas, additional materials and techniques, complex applications, marketable personal style, and portfolio development.

**CGR 250 Computer 2D Animation: Adobe After Effects /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 221, or 223 or experience in computer graphics.

Animation on the computer. Includes storyboards, techniques and terms, logo animation, character animation, metamorphic animation, and production techniques.

**CGR 251 Computer 3D Animation /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 122.

Solid modeling on the computer. Includes menus, image creation, color, printing, precision model making, object creation and design, and compatibility.

**CGR 252 Computer Multimedia Design I /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 020 or 120, or experience in computer graphics.

Computer interactive multimedia authoring. Includes using current Macromind Director software, graphics, text, animation, sound, authoring, and outputting methods.

**CGR 253 Digital Video with Premiere /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 221 or experience in computer graphics.

Design and creation of digital video on a personal computer using current Adobe Premiere software. Includes terminology and techniques, editing, special effects, and production within a professional environment.

**CGR 254 Computer Multimedia Design II /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 252.

Continuation of CGR 252. Includes multimedia formats and components, creation processes, production processes, business and legal considerations, and marketing and distribution.

**CGR 255 Television Commercial Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Designing television commercials. Includes a basic overview of videography, production procedures, conceptualizing, storyboarding, budgeting, casting, videotaping, editing, music, special effects, and legal considerations. Does not include the technical aspects of television production which are covered in MEC 125 and 225.

**CGR 256 Web Design /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 122, 221.

Design and production of graphics for the World Wide Web. Includes introduction

to the World Wide Web, hardware, software (browsers), hypertext mark-up language (HTML), home pages, links, uploading, multimedia, and web sites.

**CGR 257 Advanced Web Design /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): CGR 221, 256.

Advanced design and production of web sites and home pages. Includes planning and management, user interface, design, multimedia, careers in World Wide Web, and web education.

**CGR 260 PageMaker Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.

Computer generated text and graphics for brochures and business packages. Includes desktop environment, PageMaker software, and creating and printing a document.

**CGR 261 Adobe Illustrator Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.

Computer generated text and graphics for illustration. Includes Macintosh environment, scanning, illustration software, and techniques and procedures.

**CGR 262 QuarkXpress Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.

Computer generated text and graphics for publication. Includes desktop environment, QuarkXpress software, and creating and printing a document.

**CGR 263 Adobe Photoshop Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.

Digital photograph manipulation in Adobe Photoshop. Includes digital photographs, placing photographs, tools and palette, color manipulation, and output.

**CGR 264 Macromedia Freehand Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.

Computer generated graphics and text for illustration. Includes Macintosh environment, scanning an image, illustration software (Macromedia Freehand), creating and printing an illustration, and professional environment.

**CGR 265 Web Design Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh and computer graphics experience.

Design and production of graphics for the World Wide Web. Includes introduction to the World Wide Web, hardware, software, HyperText Mark-up Language (HTML), home pages, links, and uploading.

**CGR 266 Macromind Director Seminar on the Macintosh /1 cr. hr./ 1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.  
Design of interactive computer presentations for training, selling, information, and entertaining. Includes creating original art, presentations, interactivity, and importing and outputting.

**CGR 267 Adobe Premiere Seminar on the Macintosh /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.  
Design and produce computer graphics for video. Includes digitalizing video, editing, special effects, and outputting to video and computer formats.

**CGR 268 Adobe After Effects Seminar on the Macintosh /1 cr. hr./ 1 period (1 lec.)**

Prerequisite(s): Basic Macintosh skill required.  
Composite of animations, photos, and videos into presentations. Includes keyframe animation, composing files for productions, special effects, and outputting to video and computer formats.

**CGR 269 Advanced Web Design Seminar on the Macintosh / 1 cr. hr./ 1 period (1 lec.)**

Prerequisite(s): CGR 265 or web design experience.  
Continuation of CGR 265. Includes user interface, review of JAVA, Dynamic HTML, and XML for graphics and web design.

**CGR 270 Adobe Photoshop Tips and Tricks Seminar on the Macintosh / 1 cr. hr./1 period (1 lec.)**

Prerequisite(s): CGR 221 or 263 or experience with Adobe Photoshop.  
Computer retouching and manipulation of photos and illustrations. Includes current Adobe Photoshop software, effects, hardware, professional environment.

**CGR 271 Desktop Prepress Seminar on the Macintosh / 1 cr. hr./ 1 period (1 lec.)**

Prerequisite(s): CGR 122 or 261, 220 or 262, 221 or 263, or experience using QuarkXpress, Illustrator, or Photoshop experience.  
Integration of QuarkXpress, Illustrator, and Photoshop in preparing computer generated art for outputting to film and print. Includes trapping, color, file formats, outputting, and prepress considerations.

**CGR 296 Communication Graphics Independent Projects: /1-4 cr. hrs./ 3-12 periods (3-12 lab)**

Prerequisite(s): Consent of instructor.  
Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation. May be taken four times for a maximum of sixteen credit hours.

**CGR 297 Communication Graphics Seminar: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.  
Communication graphics job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**CGR 299 Co-op Related Class in CGR /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): CGR 199.  
Co-requisite(s): Concurrent enrollment in CGR 299 Co-op work.  
See Cooperative Education section for description.

**CGR 299 Co-op Work in CGR /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): CGR 199.  
Co-requisite(s): Concurrent enrollment in CGR 299 Co-op related class.  
See Cooperative Education section for description.

**COMMUNITY DEVELOPMENT EDUCATION**

**CDE 100 Community Organizational Management and Leadership I / 1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.  
Exploration of basic community development skills. Includes communication, organizational management, resource and leadership. Also includes techniques to analyze the neighborhood environment and enhancements to improve the quality of life.

**CDE 101 Community Organizational Management and Leadership II / 1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.  
Continuation of CDE 100. Includes a survey of skills necessary to research, design, develop and present a focused plan of action for meeting the needs of a neighborhood or community. Also includes strategic and action planning, environmental scanning, prioritization of needs, developing indicators of effectiveness, and presenting the plan orally and in writing.

**CDE 198 Special Topics in Community Development and Leadership: / .25-4 cr. hrs./ .25-4 periods (.25-4 lec., 0-16 lab)**

Prerequisite(s): None.  
Special topics in community development which reflect current issues, trends, and necessary skills. Credit may be earned for each topic taken.

**CDE 298 Advanced Topics in Community Development and Leadership: / .25-4 cr. hrs./ .25-4 periods (.25-4 lec., 0-16 lab)**

Prerequisite(s): None.

Advanced topics in community development which reflect current issues, trends, and necessary skills. Credit may be earned for each topic taken.

**COMPUTER AIDED DESIGN/DRAFTING**

**CAD 101 Computer Aided Drafting Fundamentals /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): None.

Two-dimensional computer aided and traditional drafting concepts and techniques. Includes computer aided drafting procedures and methods, electronic file management, hard copy production, freehand sketching and visualization, industry standards, and scale and dimensioning.

**CAD 120 Two-Dimensional Fundamentals /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Consent of instructor.

Computer Aided Drafting (CAD) concepts, techniques and problems in mechanical design. Includes fundamentals and standards, applications, and hard copy production.

**CAD 130 Three-Dimensional Modeling Techniques /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 120 or one year of CAD experience and consent of instructor.

Advanced Computer Aided Drafting (CAD) three-dimensional concepts, techniques, and problems. Includes review of fundamentals and standards, three dimensional wire frame, surface, and solid modeling applications, and hard copy techniques and procedures.

**CAD 135 Advanced Three-Dimensional Modeling Techniques /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 130.

Concepts and procedures for designing, modeling, and mass property analysis of mechanical/electro-mechanical models. Includes solid modeling and parametric design fundamentals and standards, design applications, mass property calculations, and hard copy techniques and procedures.

**CAD 152 Technical Drafting /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 101.

Basic concepts, techniques, and applications for technical drafting. Includes

use of mechanical drafting fundamentals and standards, advanced Computer Aided Drafting (CAD) applications, CAD procedures and methods, and hard copy techniques and procedures.

**CAD 153 Electronic Drafting /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 153.

Basic concepts, techniques, and applications for electronic drafting. Includes electronic drafting fundamentals and standards, electronic component and schematic applications, electronics theory, Computer Aided Drafting (CAD) techniques, and file management and hard copy techniques and procedures.

**CAD 155 Residential Design/Drafting /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 101.

Computer Aided Design/Drafting (CADD) of single family detached dwellings. Includes residential CADD skills, site, foundation, floor, and framing plans, building section and elevation details, mechanical, plumbing, and electrical drawings, and working drawing coordination.

**CAD 156 Commercial Design/Drafting I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 101, MAT 110 or higher.

Computer Aided Design/Drafting (CADD) of a wood frame and masonry addition and renovation of a commercial building. Includes commercial CADD skills, site, demolition, foundation, floor, and framing plans, building sections and elevations, reflected ceiling plan, and mechanical, plumbing, and electrical plans.

**CAD 157 Site Development Design/Drafting /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 101, MAT 110 or higher.

Computer Aided Design/Drafting (CADD) of a tentative plat to local governmental standards. Includes site development CADD skills, required drawings for a tentative plat, and completion of the tentative plat requirements.

**CAD 162 Mechanical Design I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 101 and 152 or concurrent enrollment.

Basic concepts, techniques, and applications for mechanical design. Includes review of mechanical design fundamentals and standards, advanced Computer Aided Drafting (CAD) applications, mechanical design procedures and methods, three-dimensional modeling techniques, and additional file management and hard copy techniques and procedures.

**CAD 163 Electronics Design /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 101 and 153 or concurrent enrollment.

Basic concepts, techniques, and applications for electronics design. Includes fundamentals and standards, electronic component, schematic diagram application, and printed circuit board design, electronics design theory, continuation of introduction to Computer Aided Drafting (CAD) procedures and methods, and file management and hard copy techniques and procedures.



**CAD 172 Geometric Dimensioning and Tolerancing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CAD 101 or equivalent drafting experience.  
Establishing controls on sizes and allowances of mechanical parts. Includes definitions and rules, form tolerances, datums, orientation controls, location controls, runout, and profile.

**CAD 199 Co-op Related Class in CAD /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**CAD 199 Co-op Work in CAD /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**CAD 202 Mechanical Design II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 162, DFT 105.

Advanced technical drawing concepts, techniques, and problems in mechanical design. Includes review of mechanical design fundamentals and standards, advanced Computer Aided Drafting (CAD) applications, advanced solid modeling techniques and hard copy techniques and procedures.

**CAD 203 Electro-Mechanical Design /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 152, 163, DFT 105 or concurrent enrollment.

Concepts, techniques, and applications for electro-mechanical design and product development. Includes electro-mechanical design fundamentals and standards, electronic symbol library, design applications, three-dimensional modeling techniques, and hard copy techniques and procedures.

**CAD 206 Commercial Design/Drafting II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 156.

Practical application of commercial Computer Aided Design/Drafting (CADD) principles. Includes additional CADD production skills, foundation, floor framing, and roof framing plans, structural elevations, architectural backgrounds, expanded plans, stair drawings, mechanical, plumbing, and electrical plans, and manual revision of computer generated drawings.

**CAD 252 Mechanical Design III /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 202, 172.

Continuation of CAD 202. Includes geometric dimensioning and tolerancing fundamentals and standards, geometric dimensioning and tolerancing symbol library, geometric dimensioning and tolerancing applications, advanced solid modeling techniques, and hard copy techniques and procedures.

**CAD 253 Microelectronic Design /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 203 and DFT 110 or concurrent enrollment.

Concepts, techniques, and applications for hybrid microcircuits and integrated circuits design. Includes microelectronic design fundamentals and standards, microelectronic symbol library, microelectronic design applications, and hard copy techniques and procedures.

**CAD 280 Portfolio /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CAD 252 or 253.

Culminating project for the Computer Aided Drafting (CAD) Program. Includes project parameters, CAD system selection, CAD procedures and methods, drawing and design applications, and hard copy techniques and procedures.

**CAD 296 Independent Study in Computer Aided Drafting /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): Consent of instructor.

Independent work on a special project not included in regular courses. The student is required to obtain a sponsoring instructor in this area and establish objectives, a method of procedure and a method of evaluation.

**CAD 297 Computer-Aided Design/Drafting Seminar: /25-4 cr. hrs./25-16 periods (.25-4 lec., 0-12 lab)**

Prerequisite(s): Consent of instructor.

Computer-Aided Design/Drafting job-related training. Includes timely and/or limited interest information. May be taken four times for a maximum of sixteen credit hours.

**CAD 299 Co-op Related Class in CAD /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**CAD 299 Co-op Work in CAD /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

## COMPUTER SCIENCE

**CSC 100 Introduction to Computers and Information Systems /3 cr. hrs./ 4 periods (3 lec., 1 lab)**

Prerequisite(s): MAT 092 or concurrent enrollment.

General introduction to personal and business computer systems. Includes terminology, fundamental concepts of information systems, hardware, software, operating systems, problem-solving, text-editing and programming.

**CSC 101 Computer Literacy /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Introduction to basic computer skills. Includes computer terminology, operating systems, file management, and communications. Also includes a brief overview of word processing, spreadsheet, and database applications.

**CSC 104 Spreadsheets /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 105 or consent of instructor.

Basic concepts of spreadsheet processing in the microcomputer environment.



Includes entering data, modifying, creating graphs, logical functions, statistical functions, financial functions, and windows. CSC 104A through CSC 104C together constitute CSC 104.

**CSC 104A Beginning Spreadsheets /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 105 or consent of instructor.

Beginning concepts of spreadsheet processing using the microcomputer. Includes techniques of creating, manipulating and printing a simple spreadsheet using popular spreadsheet software.

**CSC 104B Intermediate Spreadsheets /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 104A.

Intermediate concepts of spreadsheet processing using the microcomputer. Includes functions, windows, logical operators, and graphics using a commercial spreadsheet package.

**CSC 104C Advanced Spreadsheets /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 104B.

Advanced concepts of spreadsheet processing using the microcomputer. Includes macros, and the spreadsheet database using advanced spreadsheet software.

**CSC 105 Survey of Microcomputer Uses /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Study of microcomputer application packages. Includes operating system commands, word processing, spreadsheet and database applications. Not for programmer/analyst or engineering majors. (Same as ARC 105 and BUS 105.)

**CSC 106 Database Concepts /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 105 or consent of instructor.

Basic database concepts in the microcomputer environment. Includes database setup, information access, and programming. CSC 106A through CSC 106C together constitute CSC 106.

**CSC 106A Database Concepts: Introduction /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 105 or consent of instructor.

Beginning concepts of database processing using the microcomputer. Includes developing a database, assessing information interactively and producing reports using a popular software package.

**CSC 106B Database Concepts: Intermediate /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 106A.

Intermediate concepts of database processing using the microcomputer. Includes modification of the database structure, manipulation and reorgani-

zation of the database, use of functions, and production of complex reports using commercial database software.

**CSC 106C Database Concepts: Advanced /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 106B.

Advanced concepts of database processing using the microcomputer. Includes macros, programming with a procedural database language, and customizing data entry and output using a commercial database software package.

**CSC 107 Macintosh Software Applications /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Principles and procedures for operating Macintosh application software. Includes microcomputer overview, Macintosh basics and operating system, computer graphics, word processing, spreadsheet, database, hypercard, and desktop publishing.

**CSC 108 Microcomputer Operating Systems /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Fundamentals of microcomputer operating systems. Includes subdirectories, piping, utilities and advanced topics. CSC 108A through CSC 108C together constitute CSC 108.

**CSC 108A Microcomputer Operating Systems: Introduction /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): None.

This introductory course on microcomputer operating systems will teach operating system fundamentals, functions, structures, storage and text editing. MS-DOS is the operating system of choice in the course.

**CSC 108B Microcomputer Operating Systems: Intermediate /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 108A.

This intermediate course on microcomputer operating systems will teach more advanced concepts such as the use of subdirectories, multi-tasking, redirection, piping, debugging and backing up files. MS-DOS is the operating system of choice in the course.

**CSC 108C Microcomputer Operating Systems: Advanced /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): CSC 108B.

This course will cover advanced topics on microcomputer operating systems. MS-DOS is the main operating system in the course, but another microcomputer operating system will be taught for comparison.

**CSC 109 Using the Windows Environment /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 105.

Introduction to the Windows environment. Includes installation, basic operations, applications under Windows, customizing the environment, direct data linking, and object linking and embedding.

**CSC 109A Using the Windows Environment: Beginning Concepts / 1 cr. hr./1.4 periods (1 lec., .4 lab)**

Prerequisite(s): Consent of instructor.

Introduction to operating system concepts. Includes basic components and functions of an operating system, introduction to Windows, basic DOS, tree structure, backing up and restoring files, and uses of autoexec, configuration system, memory, and multiple configurations.

**CSC 109B Using the Windows Environment: Intermediate Concepts / 1 cr. hr./1.4 periods (1 lec., .4 lab)**

Prerequisite(s): Consent of instructor.

Key operations of Windows. Includes memory configuration for Windows, keyboard alternatives vs mouse use, running Windows applications, File Manager, Print Manager, and using Windows accessories.

**CSC 109C Using the Windows Environment: Advanced Concepts / 1 cr. hr./1.4 periods (1 lec., .4 lab)**

Prerequisite(s): Consent of instructor.

Advanced features of Windows. Includes the Windows environment, types and uses of memory, installation of Windows, customization of Windows, object linking and embedding, and direct data linking.

**CSC 110 Introduction to the Internet for New Computer Users /1 cr. hr./ 2 periods (1 lec., 1 lab)**

Prerequisite(s): Basic knowledge of personal computer operations.

History, principles, and use of Internet for persons with personal computer experience. Includes a short introduction to computers and computer communications, e-mail, Telnet, FTP, WWW, Archie, Gopher, and other Internet Tools. May be taken three times for a maximum of three credit hours.

**CSC 119 Data Communications Fundamentals /3 cr. hrs./4 periods (3 lec./1 lab)**

Prerequisite(s): CSC 109.

Comprehensive introduction to computer networks and data communications. Includes LANs, MANs and WANs, centralized versus distributed network services, transmission media and connections (coax, fiber-optic, twisted pair, etc.), network hardware, and public data networks such as the telephone network and Internet. Also includes network protocols and the OSI model, popular protocol suites, and network management.

**CSC 120 The Internet for Experienced Computer Users /1 cr. hr./ 2 periods (1 lec., 1 lab)**

Prerequisite(s): CSC 135 or multiuser computer experience.

History, principle, and use of Internet. Includes Internet mail, Telnet, FTP, WWW, Archie, Gopher, and other Internet tools. Students must have a working knowledge of DOS, text editing, and electronic mail.

**CSC 121 WWW Publishing and Support /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): Consent of instructor.

Development of WWW documents using HTML. Includes image maps, tables, frames, and forms. Also includes embedding multi-media into a page, Cascading Style Sheets, effective presentation, and design.

**CSC 130 Programming Fundamentals /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 100 or satisfactory score on CSC 100 test.

Structured programming principles and techniques. Includes problem analysis, the algorithm, structured program design, the program development cycle, table processing and file handling. Although emphasis is on logic rather than a language, C++ is taught to reinforce basic principles.

**CSC 131 Computer Science Concepts /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 100 or equivalent.

Study of computer science structured programming concepts using the Turbo PASCAL language for implementation. Includes the program development cycle, problem solutions using the algorithm, and structured design. Also includes the study of data types, conditional expressions, logic control structures, file manipulation, and beginning link lists.

**CSC 135 Introduction to Computer Operations /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 100.

Examination of basic computer hardware and software concepts. Includes operating systems, time sharing, file organization, compilers, utilities, networks, memory management, and text editing.

**CSC 136 Microcomputer Components /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Primary components of common microcomputer systems, monitors, hard and floppy drives, printers, accessory boards, and cables. Includes procedures of upgrading a basic system, the use of interfacing equipment, trouble-shooting techniques and simple maintenance practices.

**CSC 137 Introduction to the UNIX Operating System /3 cr. hrs./ 4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 135 or consent of instructor.

Principles and tools of the UNIX operating system. Includes utilities, file structure, text editors, tools, documentation, networking, and the comparison and usage of different shells.

**CSC 139 Introduction to Visual BASIC /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 130 or 131 or consent of instructor.

Introduction to event-driven and object-oriented programming in Visual BASIC. Includes debugging techniques, data types, operators, application design, program flow, subroutines, objects, arrays, and functions.

**CSC 140 FORTRAN Programming /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 100, and MAT 092 or satisfactory score on math assessment test.

Techniques of module programming using FORTRAN 90 constructs. Includes design, error-trapping, on-line debugging, objects, testing procedures, and hierarchical development concepts. Also includes using the DOS and/or Windows environment.

**CSC 160 COBOL Programming /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 130 or 131, and 135.

Comprehensive study of and practice in writing programs using COBOL (standard business language). Includes proper documentation, programming standards and programming techniques for utilizing auxiliary storage devices.

**CSC 175 QBASIC/Quick BASIC /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 130 or 131.

Introductory and advanced design and programming of business problems using QBASIC and QuickBASIC. Includes interactive programs, sequential and random file manipulation, string and array processing, sorting, master and transaction file updates, menus, color, text graphics, and sound.

**CSC 180 Job Entry Procedures /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles and techniques for successful job hunting. Includes application letter and resume writing, interviewing and related topics.

**CSC 185 Work Standards and Job Attitudes /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of proper work standards and job attitudes. Includes ethics, work relationships and human relations using role playing.

**CSC 187 Data Processing Projects I /1-3 cr. hrs./3-9 periods (3-9 lab)**

Prerequisite(s): None.

Practical work experience on assigned data processing projects in data entry, controls and operations. May be taken four times for a maximum of twelve credit hours.

**CSC 199 Co-op Related Class in CSC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**CSC 199 Co-op Work in CSC /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**CSC 204 Advanced Spreadsheet Concepts /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 104 or CSC 104C.

Advanced concepts in electronic spreadsheet applications. Includes macros, graphical presentation of spreadsheet data, and analysis and design of large spreadsheets.

**CSC 206 Database Procedural Language Programming /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CSC 106 or 106C, 130 or 131.

Fundamentals of database management systems. Includes programming of an associated procedural database language and an emphasis on relational model and query language (SQL).

**CSC 220 Novell NetWare Networking and Administration /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 119 and CSC 130 or 131, or consent of instructor.

Administration of microcomputer networks using Novell NetWare. Includes networking fundamentals, computer networking protocols, NetWare server installation and configuration, maintenance, operation and administration.

**CSC 221 Windows NT Networking and Administration /5 cr. hrs./6 periods (4 lec./2 lab)**

Prerequisite(s): CSC 119 or consent of instructor.

Computer networking using MS-Windows NT. Includes networking fundamentals, computer networking protocol comparisons, MS-Windows NT Server installation, maintenance, operation and administration.

**CSC 222 Advanced Novell Networking /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CSC 220 or consent of instructor.

Advanced concepts of Novell NetWare networking. Includes planning, design and installation of network directory services. Also includes server and client management, trouble-shooting techniques and managing the enterprise.

**CSC 223 Advanced Windows NT Networking /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CSC 221 or consent of instructor.

Configuration, installation and management of Windows NT networking in the enterprise. Includes protocol and binding configuration, server management, user and client management, interoperability with Novell NetWare, and problem response and resolution.

**CSC 225 Linux (UNIX) System and Network Administration /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): CSC 220 or consent of instructor.

Operations and network administration of the Linux (UNIX) system. Includes comparison of Linux distributions and installation of Linux. Also covers network configuration including /etc/inetd.conf, Apache, SAMBA, FTP and NFS and addresses security issues associated with the Internet.

**CSC 230 Data Structures /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 265.

Advanced topics in computer science and programming in C. Includes software design and development, testing and validation, and the algorithmic process. Also includes dynamic allocation, advanced sort and search algorithms, recursion, stacks, queues, linked lists, trees, hash tables, and graphs.

**CSC 238 Integrated Package Project /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CSC 204.

Installation of horizontally integrated software to solve information processing problems. Integrated software functions in the microcomputer environment, such as electronic spreadsheets, database, graphics, telecommunications and programming languages.

**CSC 239 Programming in Visual BASIC /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 139.

Advanced event-driven and object-oriented programming in Visual BASIC for Windows 95 or NT. Includes Relational Database Data Control and DAO, MDI, API functions, OLE Automation, creation of Active X Controls, writing context sensitive help, interfacing with WWW, Client/Server using RDO and ODBC.

**CSC 240 Machine Architecture and Organization /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 250.

Introduction to digital computers, elementary hardware concepts, machine operations and instructions, assembly language concepts, and programming in assembly language.

**CSC 250 Introduction to Assembly Language /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 130 or 131; and one high-level computer language or consent of instructor.

Beginning 80x86 assembly language programming. Includes various number systems, machine organization and different addressing methods. Also includes array processing, indexing, sorting, stack parameter passing, internal and external procedures, string functions, data packing, logical operatives, DOS and BIOS interrupts, macros, and file I/O.

**CSC 256 Microcomputer Software Applications /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 130, ACC 102.

Study of microcomputer applications. Includes a word processor, a spread sheet, a micro level database, a graphics system and a widely based microcomputer operating system. Also includes a short overview of available microcomputer accounting systems.

**CSC 260 Advanced Cobol and File Management /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 160.

Advanced COBOL programming techniques and language features are thoroughly explored. Includes report writer, sort verbs, file organization, debugging aids, and interaction with the operating system.

**CSC 265 The C Programming Language /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): Two high level languages and an assembly language.

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.

**CSC 266 CGI Programming with PERL /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 121 and 265 or consent of instructor.

Development of CGI scripts using Perl. Includes producing efficient and effective scripts. Also includes creating interactive Web pages using forms, post processing, CGI graphics, cookies, and animation.

**CSC 272 Advanced Networking Concepts /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): CSC 119 and 136 or consent of instructor.

Advanced networking concepts and technologies applied to Local and Wide Area networks. Includes topology and standards, internetworking devices, such as routers, hubs and bridges, and network design and layout.

**CSC 273 Advanced Web Page Development /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): CSC 121 or consent of instructor.

Advanced web page design incorporating varied scripts and enhancement procedures. Includes CGI scripts, Java Applets, sound, video, advanced graphics and JavaScript. Also includes client pull, server push, dynamic HTML, XML (extensible markup language) graphics optimization, and large site management.

**CSC 275 Advanced 80x86 Assembly Language /4 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 250.

Advanced 80x86 assembly programming techniques. Includes macros, file I/O, conditional assembly, high level language interfacing, direct disk accessing, hardware and software interrupts, and TSR's.

**CSC 277 Advanced Programming in C /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 265.

Advanced topics and techniques in the C programming language. Includes components of a compiler, data structures and graphics. Also includes analysis of code produced by typical C programs and other advanced, current topics in C programming. May be taken three times for a maximum of fifteen credit hours.

**CSC 278 C++ and Object-Oriented Programming /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 265 or consent of instructor.

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.

**CSC 279 Java Programming /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 265.

Introduction to the Java programming language. Includes writing standalone programs with use of Buttons, Scrollbars, Menus, Checkboxes, and other features. Also includes fundamentals of sending both data and programs, such as Applets, over the Internet.

**CSC 280 Systems Analysis /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 140 or 160 or 206.

Tools of systems analysis. Includes documentation methods (systems flow chart, decision table, etc.), user communication, record layout, code design, file design (batch and on-line database concepts) and documentation design (source and printed output). Also includes selected business system applications of the above tools.

**CSC 281 Systems Design /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): CSC 280.

Application of the tools of systems analysis covered in CSC 280 to design a total system. The case study approach is used. The student will prepare a feasibility study to present alternatives or a systems proposal to recommend a course of action.

**CSC 287 Data Processing Projects II /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): Consent of instructor.

Analysis and solution of a computer problem related to business. Includes choice of a computer language, structured programming techniques, setting priorities, and development and testing of procedures. Also includes methods of documentation, enhancement projection, and making a formal presentation.

**CSC 289 Database Systems Design and Management /5 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): CSC 260 or 277 or 278, and 280.

Fundamentals of data structures and database management systems. Includes relational, hierarchical, network, and new data models. Also includes query language (SQL) concepts and a relational database system.

**CSC 298 Advanced Topics in Computer Science: /3-4 cr. hrs./4-6 periods (3-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.

Advanced topics in computer science which reflect current technologies, issues, and trends. Credit may be earned for each topic taken.

**CSC 299 Co-op Related Class in CSC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**CSC 299 Co-op Work in CSC /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**COMPUTER SOFTWARE APPLICATIONS****CSA 100 Microsoft Word 97 /.75-3 cr. hrs./75-3 periods (.75-3 lec.)**

Prerequisite(s): None.

Word processing concepts using Microsoft Word. Includes creating and editing documents, and using character and paragraph formatting, tables, styles, templates, and macros, merge, multiple-columnar formats, Internet basics, creating and using advanced styles, templates, and forms, working with graphics in documents, working with large documents, determining document layout, and sharing documents.

**CSA 100A Introduction Word 97 /.25-1 cr. hr./25-1 period (.25-1 lec.)**

Prerequisite(s): None.

Word at the beginning level. Includes creating and editing documents, and using character and paragraph formatting.

**CSA 100B Intermediate Word 97 /.25-1 cr. hr./25-1 period (.25-1 lec.)**

Prerequisite(s): None.

Word at the intermediate level. Includes tables, styles, templates, and macros, merge, multiple-columnar formats, and Internet basics.

**CSA 100C Advanced Word 97 /.25-1 cr. hr./25-1 period (.25-1 lec.)**

Prerequisite(s): None.

Word at the advanced level. Includes creating and using advanced styles, templates, and forms, working with graphics in documents, working with large documents, determining document layout, and sharing documents.

**CSA 101 WordPerfect for Windows /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Applications of WordPerfect software. Includes an introduction to Windows, and using the basic, intermediate, and advanced capabilities of WordPerfect for Windows software to prepare a variety of documents.

**CSA 102 WordPerfect 6.1 for Windows /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Applications of WordPerfect software. Includes use of WordPerfect software, basic and advanced functions, commands and desktop tasks.



**CSA 110 Excel /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Excel for Windows spreadsheet software. Includes Excel basics, entering data and navigating in a worksheet. Introduction to workbooks, moving and copying data, formatting a worksheet, printing a worksheet, charting, sorting and locating information, using the list management capabilities, customizing toolbars, creating pivot tables, linking files, consolidating data, and using macros.

**CSA 110A Excel - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Excel at the beginning level. Includes Excel basics, entering data and navigating in a worksheet, introduction to a workbook, moving and copying data, formatting a worksheet, and printing a worksheet.

**CSA 110B Excel - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Excel for Windows at the intermediate level. Includes creating, modifying, customizing, and enhancing charts, sorting and locating information, and using the list management capabilities.

**CSA 110C Excel - Module C 1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Excel at the advanced level. Includes customizing toolbars, creating pivot tables, linking files, consolidating data, and recording macros.

**CSA 111 Lotus 1-2-3 Spreadsheets /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Solving business problems using Lotus 1-2-3. Includes making forecasts, setting up calculations, performing statistics, graphing, searching databases and reporting.

**CSA 130 PowerPoint /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Fundamentals of PowerPoint for Windows 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.

**CSA 130A PowerPoint - Module A /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): None.

PowerPoint for Windows presentation software at the beginning level. Includes introduction to PowerPoint, beginning a presentation, templates and Wizards, color scheme, drawing tools, clip art, and running a show.

**CSA 130B PowerPoint - Module B /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): None.

PowerPoint for Windows presentation software at the intermediate level. Includes presentation in outline view, toolbars, organization charts, graphs, formatting text and graphics, templates and the slide master, slide shows, and output and presentation options.

**CSA 130C PowerPoint - Module C /1 cr. hr./1.35 periods (1 lec., .35 lab)**

Prerequisite(s): None.

PowerPoint for Windows presentation software at the advanced level. Includes animation, video, sound, creating action buttons, connecting to the Internet, and running a slide show.

**CSA 140 ClarisWorks /1 cr. hr./1.5 periods (1 lec., .5 lab)**

Prerequisite(s): None.

ClarisWorks for the beginning-level student. Includes word processing, spreadsheet charts and graphics, integrating applications, classroom uses of templates, spreadsheets, graphics and charts, designing a newsletter, and setting up a database.

**CSA 150 Internet Laboratory /1 cr. hr./2 periods (2 lab)**

Prerequisite(s): None.

Using the Internet. Includes e-mail, Telnet, FTP, WWW, Archie, Gopher, and other Internet tools. May be taken six times for a maximum of six credit hours.

**CSA 160 Instructional Applications of the Internet /1 cr. hr./1.5 periods (1 lec., .5 lab)**

Prerequisite(s): None.

Integrating Internet services into the instructional process. Includes an introduction to the Internet, using the Internet, using the World Wide Web, instructional design for Computer-Mediated Communications (CMC), and educational issues of computer-mediated communication, and new technologies.

**CSA 170 Microsoft Windows /2 cr. hrs./2.5 periods (2 lec., .5 lab)**

Prerequisite(s): None.

Introduction to Microsoft Windows on the personal computer. Includes overview of the microcomputer systems, fundamentals of Windows, customizing Windows, file management, and applications and accessories that work with Windows.

**CSA 173 Computer Fundamentals - One/ 1 cr. hr./2 periods (1 lec, 1 lab)**

Prerequisite(s): None

Overview of computer applications and functions. Includes historical significance of the computer, components of a computer system, spreadsheet, database, and word processing use within a workplace, and computer networks for communication and information.



**CSA 174 Computer Fundamentals - Two /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

Overview of computer applications and functions. Includes historical significance of the computer, components of a computer system, spreadsheet, database, and word processing use within a workplace, office networking, and computer networks for communication and information.

**CSA 175 Computer Fundamentals - Three /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Overview of computer applications and functions. Includes historical significance of the computer, components of a computer system, spreadsheet, database, and word processing use within a workplace, advanced office software, office networking, and computer networks for communication and information.

**CSA 198 Special Topics in Software Application: /5-4 cr. hrs./ .5-8 periods (.5-4 lec., .5-4 lab)**

Prerequisite(s): Consent of instructor.

Special topics in computer software applications to meet a variety of needs. Credit may be earned for each topic taken.

**CSA 200 PageMaker for Windows /3 cr. hrs./4.5 periods (3 lec., 1.5 lab)**

Prerequisite(s): None.

Using PageMaker for desktop publishing. Includes layout and design, printing textual material, graphic materials, design elements, and printing alternatives.

**COOPERATIVE EDUCATION****199 Co-op Related Class /1 cr. hr./1 period (1 lec.)**

Co-requisite(s): Concurrent enrollment in 199 Co-op Work.

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. May be taken two times for a maximum of two credit hours.

**199 Co-op Work /1-8 cr. hrs./5-40 periods (5-40 lab)**

Co-requisite(s): Concurrent enrollment in 199 Co-op Related Class.

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. May be taken two times for a maximum of sixteen credit hours.

**299 Co-op Related Class /1 cr. hr./1 period (1 lec.)**

Co-requisite(s): Concurrent enrollment in 299 Co-op Work.

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. May be taken two times for a maximum of two credit hours.

**299 Co-op Work /1-8 cr. hrs./5-40 periods (5-40 lab)**

Co-requisite(s): Concurrent enrollment in 299 Co-op Related Class.

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. May be taken two times for a maximum of sixteen credit hours.

**CED 090 Field Experience in Workplace Readiness /3 cr. hrs./7 periods (2 lec., 5 lab)**

Prerequisite(s): Consent of instructor.

Introduction to the workplace for high school students. Includes teamwork, problem solving, self-management, diversity, communication, and ethics.

**CED 199 Co-op Related Class in Liberal Arts /1 cr. hr./1 period (1 lec.)**

Co-requisite(s): Concurrent enrollment in 199 Co-op Work.

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. May be taken two times for a maximum of two credit hours.

**CED 199 Co-op Work in Liberal Arts /1-8 cr. hrs./5-40 periods (5-40 lab)**

Co-requisite(s): Concurrent enrollment in 199 Co-op Related Class.

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. May be taken two times for a maximum of sixteen credit hours.

**CED 299 Co-op Related Class in Liberal Arts /1 cr. hr./1 period (1 lec.)**

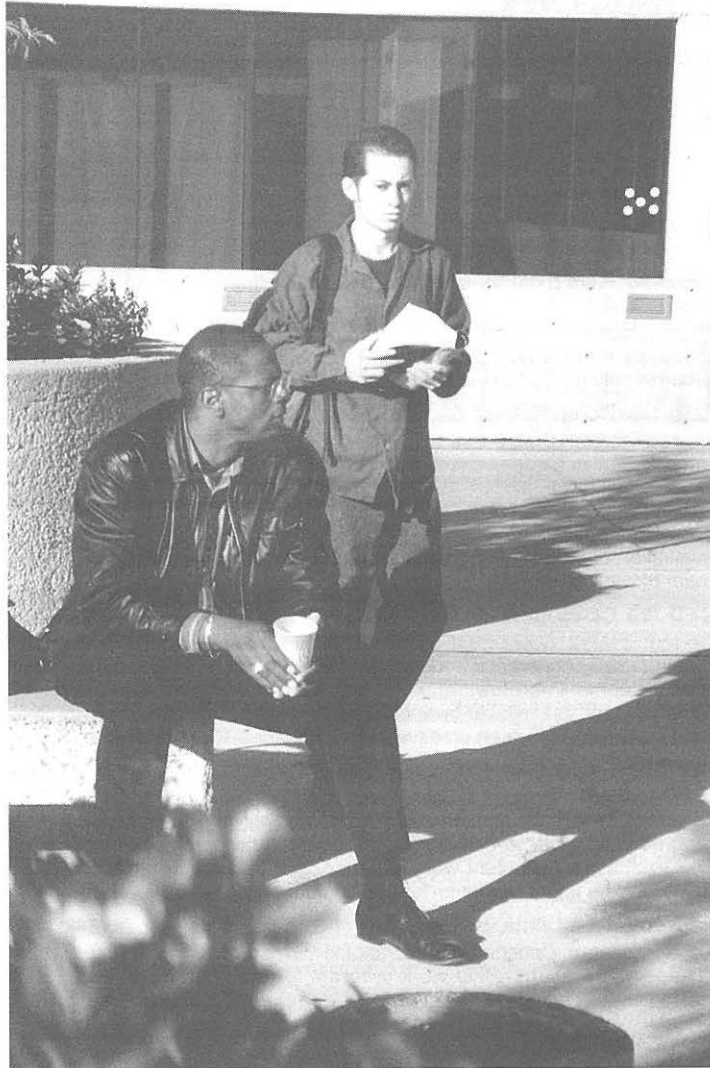
Co-requisite(s): Concurrent enrollment in 299 Co-op Work.

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. May be taken two times for a maximum of two credit hours.

**CED 299 Co-op Work in Liberal Arts /1-8 cr. hrs./5-40 periods (5-40 lab)**

Co-requisite(s): Concurrent enrollment in 299 Co-op Related Class.

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. May be taken two times for a maximum of sixteen credit hours.



## CORRECTIONAL OFFICERS TRAINING

### **COT 100 Introduction To Corrections Systems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Philosophy and history of correctional services and a survey of the correctional sub-systems of institutions, by type and function, probation concepts, and parole operations. Includes correctional employee responsibilities as applied to offender, behavior modification via supervisory control techniques and rehabilitation goals as they affect individual and inmate cultural groups in both confined and field settings.

### **COT 101 Correctional Institutions /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of correctional institutions with an emphasis on personnel and security measures, care and treatment programs and institutional planning. Includes familiarization with the criminal justice system and matters of custody and treatment. Inmate sub-cultures, and organized crime in correctional institutions and jails will also be discussed.

### **COT 102 Firearms /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Moral aspects, legal provisions, safety precautions and restrictions covering the use of firearms. Includes firing of the sidearm and shotgun.

### **COT 103 Prisoners' Rights /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Overview of prisoners' procedural due process and substantive constitutional rights. Includes the rights of pretrial detainees and the liability of police and correctional officers.

### **COT 104 Methods of Crisis Intervention /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Use of appropriate conflict resolution techniques by police and correctional officers. Includes use of assertive communication, force, safety procedures, and referrals.

### **COT 106 Firearms Certification /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Training and practical application in the use of firearms. Includes qualification in the use of .38 caliber revolver, .22 caliber rifle, and the 12-gauge shotgun.

### **COT 107 Communication in Criminal Justice /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Barriers to effective communication in the field of criminal justice. Development of effective intradepartmental and interdepartmental communication as well as communication with the community and within the courtroom.

**COT 121 Correctional Case-Work Techniques /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Theory and application of case-work techniques and treatment. Includes theories of crime and delinquency, perspectives on the application of theory to treatment, case-worker attitudes and counseling styles, models of offender classification and treatment, and models for correctional counseling.

**COT 122 Identification of Gangs /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

History, philosophy, and identification of prison organized gangs and revolutionary groups in the United States. Includes types of gangs, philosophy underlying gang behavior, beliefs and philosophies of individual organizations, and techniques for identifying gang members.

**COT 123 Organization and Impact of Gangs /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Structure and development of gang organizations. Includes organization and oaths, development of a new gang, current and projected impact, gang activity in community, and curtailing activities and development.

**COT 124 Special Populations I /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Recognition of non-psychotic and psychotic behaviors. Includes personality disorders, drug-affected behavior, and suicide. Emphasis upon appropriate correctional staff response and the identification of community agencies that can provide assistance.

**COT 125 Special Populations II /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Special problems of illegal aliens, the physically and mentally disabled, and the elderly in the criminal justice system. Includes cultural impact and differences in perception of racial and ethnic groups, problems and needs of physically and mentally impaired persons and the elderly, and the legal problems associated with illegal aliens.

**COT 126 Basic Management Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Overview of the management process in criminal justice agencies. Includes management processes, motivation, leadership, communication, decision making, and public relations.

**COT 127 Management By Objectives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Overview of Management By Objectives (MBO) as pertaining to criminal justice agencies. Includes definition and phases of MBO, the benefits of implementing the program, and basic MBO processes.

**COT 128 Parole Supervision /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Supervisory techniques for the parole officer. Includes defensive driving, vehicle dynamics, driving exercises, crisis/conflict intervention, restraint devices, hostage negotiations, parole relationships, caseload management, counseling, and stress management.

**COT 129 Correctional Supervision /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of Arizona Department of Corrections

Overview of basic responsibilities and techniques for supervision of correctional employees. Includes leadership attitudes, skills, and behaviors needed in the correctional environment.

**COT 130 Correctional Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): COT 129.

Management techniques for correctional supervisors and managers. Includes leadership, writing/preparing of reports, legal issues, budget management, personnel issues and problem solving techniques.

**COT 131 Correctional Administration /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Organization and management of correctional facilities. Includes organizational principles and practices, structuring the organization, administrative communications, personnel management, supervision, training and education for correctional personnel, research and planning, fiscal management, and probation and parole administration.

**COT 132 Criminal Justice Management Problems /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Common management problems in criminal justice agencies. Includes conflict, labor, fiscal, and time management; organizational change and development; and discipline.

**COT 205 Law Enforcement for the Correctional Peace Officer /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Employment as an Arizona Correctional Officer and consent of instructor.

Introduction to law enforcement for the corrections officer. Includes law enforcement, legal matters, patrol procedures, crime scene management, police proficiency skills, patrol procedures, and law enforcement services. Enrollment in this course is limited to those students that are Arizona correctional officers.

## COURT REPORTING

### **CRT 101 Theory of Machine Shorthand I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic conflict-free theory for writing on the stenotype machine. Includes the theory and operation of the stenotype machine, stenotype theory, machine dexterity, and the fluent reading of stenotype notes. Also includes the writing of simple words, sentences, outlines, and arbitraries.

### **CRT 102 Theory of Machine Shorthand II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CRT 101.

Continuation of CRT 101. Includes advanced theory and operation of the stenotype machine, stenotype theory, machine dexterity, fluent reading of stenotype notes, and the ability to start taking dictation.

### **CRT 110 Skill Building and Development /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CRT 102.

Application of machine shorthand theory. Includes accuracy of theory, vocabulary development, and skill building. Also includes the practice and application of dictation and transcription based on theory learned in the theory classes.

### **CRT 120 Computer Aided Transcription /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CRT 110.

Introduction to the use of a computer aided transcription system. Includes computer editing, printing, real-time reporting and multi-media technology used in the real-time captioning professions. Also includes basic computer commands and the practice of computer aided transcription.

### **CRT 130 Beginning Speed Building /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CRT 120.

Instruction and practice of speed building techniques. Includes continued practice of speed building techniques and application of this to literary, jury charge, testimony, and legal dictation for transcription.

### **CRT 140 Intermediate Speed Building /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CRT 130.

Intermediate instruction and practice of speed building techniques. Includes continued practice of speed building techniques and application of this to literary, jury charge, testimony, and legal dictation for transcription.

### **CRT 150 Advanced Speed Building /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CRT 140.

Advanced instruction and practice of speed building techniques. Includes continued practice of speed building techniques and application to literary, jury charge, testimony, and legal dictation for transcription.

## COURT SUPPORT SERVICES

### **CSS 101 Survey of Court Systems I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

An overview of the major structures and organization of the American judicial system, and a comprehensive overview of the roles and purposes of distinct jurisdictions, and the role of court support personnel in these courts. Includes an examination of the basic professional expertise required in the support of court operations. Also includes an examination of the roles of the major participants within the court milieu, and the extent of support services required of these participants.

### **CSS 111 Introduction to the United States Judicial System /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Major structures and organization of the American judicial system. Includes an emphasis on the Arizona courts. Also includes a comprehensive overview of the roles and purposes of distinct jurisdictions, and the role of court support personnel in these courts.

### **CSS 112 Role of Court Support Staff in the United States Judicial System /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Roles of the major participants within the court milieu. Includes organizational structure of courts, role of court support staff in the judicial process, daily operation of the courts, and ethics.

### **CSS 113 Case Management Concepts /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Basic concepts of case management used in contemporary courts. Includes an examination of the basic professional expertise required in the support of court operations.

### **CSS 114 Jury Management /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

An overview of how individuals are selected for potential jury service. Includes an examination of the basic managerial expertise needed in jury management. Also includes an examination of the role of technology in jury management.

### **CSS 115 Technology in the Courts /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Examination of technology management to enhance the capability and efficiency of the court system. Includes an analysis of technology applied to logistical support, jury management, cash management, courtroom support and case processing.

**CSS 116 Introduction to the Tribal Courts /3 cr. hr./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of the roles and purposes of tribal courts. Includes an overview of the major functions, structure and organization of Tribal Courts, and the role of the tribal court in the total American judicial system. Also includes a comprehensive overview of the roles and purposes of tribal court jurisdictions, the role of tribal court advocates and court support personnel in these courts and a survey of the structure of the Arizona judicial system.

**CSS 117 Alternative Dispute Resolution /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Theory and practice of Alternative Dispute Resolution. Includes an examination of Alternative Dispute Resolution as a process to expedite case processing. Also includes strategies and tactics involved in Alternative Dispute Resolution.

**CSS 120 Introduction to Tribal Court Advocacy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CSS 116.

Introduction to the role and purpose of tribal court advocates. Includes an examination of tribal court jurisdictions and the role of tribal court advocates in these courts. Also includes the major functions, structure, and organization of Tribal Courts including the role of the tribal court advocate, a survey of the structure of the Arizona judicial system, and the role of the tribal court in the Arizona judicial system.

**CSS 198 Special Topics in Court Support Services: /.25-3 cr. hr./ .25-12 periods (.25-3 lec., .25-9 lab)**

Prerequisite(s): None.

Special topics in Court Support Services which reflect current issues, trends, technologies, and concerns of timely or current interest. Credit may be earned for each topic taken.

**CSS 201 Survey of Court Systems II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CSS 101.

An overview of the role of court support personnel in the total operation of the American judicial system. Includes an examination of the basic managerial expertise needed to support the complex operation of the courts. Also includes an examination of technology management to expand the capacity of the court system and improve the performance of the courts. Also includes an analysis of the areas of responsibility including logistical support, staff relations, jury management, cash management, courtroom support, customer service, and case processing.

**CSS 210 Judicial System Communication /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the writing and speaking skills needed in the court support fields. Includes practice and application of these skills to court specific

reports, narratives and forms. Also includes preparation and presentation of written reports, oral presentations, group projects, and technical presentations. Also includes court specific terminology, form completion and other communication skills required by the court support areas.

**CSS 220 Issues in Tribal Court Advocacy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): CSS 116.

Overview of the major issues incorporated in the study of tribal court advocacy. Includes the study of issues essential to tribal governments in developing and strengthening their systems of justice. Also includes the re-examination of the role of the tribal court advocate in the most essential issues involved in tribal court sovereignty.

**CSS 290 Court Support Services Field Experiences /3 cr. hrs./ 15 periods (15 lab)**

Prerequisite(s): CSS 101.

Participation in judicial system placements to acquire practical experiences in the court support areas. Includes seminars conducted to discuss the field experiences in relation to court support services. Also includes an analysis of the host agencies roles and purposes in the total judicial process.

**DANCE****DNC 130 Beginning Tap Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to tap dancing. Includes basic foot movement, body movements, simple steps, and a complete routine. May be taken four times for a maximum of four credit hours.

**DNC 131 Intermediate Tap Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Tap dance for students with basic skills. Includes time steps, coordination skills, footwork, and more complex combinations and routines. May be taken four times for a maximum of four credit hours.

**DNC 132 Advanced Tap Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Advanced techniques and skills in tap dance. Includes time steps, footwork, and combinations and routines. May be taken four times for a maximum of four credit hours.



**DNC 140 West Coast Swing /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the West Coast Swing. Includes an overview of the West Coast Swing, dance techniques, beginning and intermediate level patterns, moves, and turns.

**DNC 145 Beginning Country Western Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to country western dance for the beginner. Includes basic steps, turns, techniques, and skill development. May be taken four times for a maximum of four credit hours.

**DNC 146 Intermediate Country Western Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Country western dance techniques for the confident dancer. Includes dance patterns, styles and performance transformation. May be taken four times for a maximum of four credit hours.

**DNC 147 Advanced Country Western Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Advanced country western dance techniques. Includes dance patterns, dance execution, and performance techniques. May be taken four times for a maximum of four credit hours.

**DNC 150 Introduction to Ballet /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to basic principles of classical ballet. Includes development of proper body alignment, muscular structure and movement memory for use in other dance classes. Also includes acquisition of a working vocabulary of ballet terminology.

**DNC 160 Ballroom/Latin Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Basic techniques of ballroom and Latin dancing. Includes foxtrot, waltz, swing, rumba, cha-cha, and tango. Also includes dance movement variations.

**DNC 166 Beginning Modern Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Development of basic skills for dance. Includes biomechanical function and care of the body, dance theory and technique, and expressive movement. May be taken four times for a maximum of four credit hours.

**DNC 167 Intermediate Modern Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Development of intermediate skills in stretch and strength for dance. Includes proper biomechanical function and care of the body, dance theory,

and technique. Also includes an introduction to more complex material and greater movement articulation is expected. May be taken four times for a maximum of four credit hours.

**DNC 168 Advanced Modern Dance /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Development of advanced skills in stretch and strength for dance. Includes proper biomechanical function and care of the body, dance theory and technique, and a capacity for expressive movement. May be taken four times for a maximum of four credit hours.

**DNC 169 Dance Ensemble /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): DNC 166, 167, or 168.

Development of dance technique and performance skills. Includes learning dances, the principles of dance composition, and the concert experience. May be taken four times for a maximum of four credit hours.

**DNC 170 Introduction to Bailes Folklóricos Mexicanos /2 cr. hrs./3 periods (1 lec., 2 lab)**

May be taken four times for a maximum of eight credit hours.

**DNC 171 Folkloric Mexican Dance I: Oaxaca /2 cr. hrs./3 periods (1 lec., 2 lab)**

May be taken four times for a maximum of eight credit hours.

**DNC 172 Bailes Folklóricos Mexicanos: Vera Cruz /2 cr. hrs./3 periods (1 lec., 2 lab)**

May be taken two times for a maximum of four credit hours.

**DNC 173 Folkloric Mexican Dance II: Michoacan /2 cr. hrs./3 periods (1 lec., 2 lab)**

May be taken two times for a maximum of four credit hours.

**DENTAL ASSISTING**

**DAE 160 Orientation to Dental Care /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Consent of program coordinator.

Overview of the field of dental care. Includes the dental health team, ethics, jurisprudence and professional organizations.

**DAE 161 Biomedical Dental Science /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of program coordinator.

The biosciences as they relate to the oral cavity. Includes anatomy, physiology, histology, microbiology and nutrition as it affects total dental health.



**DAE 162 Dental Assisting I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Consent of program coordinator.

Principles and techniques of dental assisting. Includes morphology of human dentition and dental instruments and their use in various operative procedures.

**DAE 163 Oral Radiography /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Consent of program coordinator.

Use of dental roentgenography as a diagnostic aid. Includes safety factors when exposing radiographs; training in exposing, processing, mounting, labeling and filing radiographs; and training in recognizing radiographs that are acceptable for diagnosis.

**DAE 164 Dental Materials /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Consent of program coordinator.

Chemical and physical properties of dental materials used in dental practice. Includes materials used in preventive, restorative, and prosthetic procedures.

**DAE 165 Pre-Clinical Procedures /2 cr. hrs./5 periods (1 lec., 4 lab)**

Prerequisite(s): Consent of program coordinator.

Techniques and procedures of chairside assisting in general and specialty dental practices.

**DAE 166 Dental Assisting II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DAE 160, 161, 162, 163, 164, 165.

Principles and techniques of pharmacology, therapeutics and emergency medical-dental care as applied to dental assisting.

**DAE 167 Dental Assisting III /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DAE 161, 162, 163, 164, 165.

Principles and techniques of dental practice management and oral health education as applied to dental assisting.

**DAE 190 Clinical Procedures /8 cr. hrs./24 periods (24 lab)**

Prerequisite(s): DAE 161, 162, 163, 164, 165.

Application of acquired skills in a clinical environment under direct supervision of the dentist and instructor.

**DAE 198 Special Topics in Dental Assisting: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.

Special topics in dental assisting which reflect current trends and developments, changes in methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

**DENTAL HYGIENE****DHE 101 Pre-Clinical Dental Hygiene /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): Admission to Dental Hygiene Program.

Dental hygiene clinical procedures. Includes asepsis, infection control, gathering and evaluating patient medical and dental histories, legal and ethical considerations, body mechanics, intra and extra oral exams, and instrumentation. Also includes a laboratory involving practicing dental hygiene procedures on student partners.

**DHE 104 Dental and Oral Morphology /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Admission to Dental Hygiene Program.

Form and function of primary and permanent dentition. Includes observation, identification and recording of normal and abnormal dentition.

**DHE 107 Oral Embryology and Histology /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Admission to Dental Hygiene Program.

Development and histology of teeth, intra and extra oral tissues of the head as they relate to the practice of dental hygiene.

**DHE 116 Oral Radiography /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): DHE 101, 104, 107, 209.

Dental roentgenography as a diagnostic aid. Includes safety factors when exposing radiographs, training in exposing, processing, mounting, labeling and filing radiographs, and training in recognizing radiographs that are acceptable for diagnosis.

**DHE 119 Periodontology /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): DHE 101, 104, 107, 209.

Etiology, diagnosis and prognosis of periodontal disease.

**DHE 120 Oral Pathology /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): DHE 101, 104, 107.

Co-requisite(s): Concurrent enrollment in DHE 116 and DHE 190.

Introduction to diseases of the mouth and surrounding structures. Includes diagnosis and etiology, oral manifestation of generalized disease, and neurological conditions.

**DHE 121 Nutrition and Preventive Dentistry /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Admission to Dental Hygiene Program.

Introduction to dental disease and the promotion of dental health. Includes oral hygiene instruction, antimicrobials, fluorides, nutrition, and diet and their role in dental disease and health.

**DHE 190 Clinical Dental Hygiene I /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): DHE 101, 104, 107, 121.

Application of dental hygiene skills with a variety of clinical patients with simple dental hygiene care plans. Includes an introduction to alternative instrumentation procedures and clinical application of chemotherapeutics.

**DHE 191 Clinical Dental Hygiene II /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): Completion of first year of Dental Hygiene Program.  
Application of dental hygiene skills with a variety of clinical patients.

**DHE 198 Special Topics in Dental Hygiene: /.25-4 cr. hrs./25-16 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.  
Special topics in dental hygiene which reflect current trends and developments, changes in methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

**DHE 204 Dental Materials /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Completion of first year of Dental Hygiene Program.  
Chemical and physical properties of dental materials used in dental practice. Includes materials used in preventive, restorative, and prosthetic procedures.

**DHE 207 Pharmacology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DHE 116, 119, 190.  
Introduction to the theory of pharmacology as it relates to dentistry. Includes identification of drugs which affect or are affected by dental treatment.

**DHE 208 Pain and Anxiety Control for Dental Hygiene /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Completion of first year Dental Hygiene Program and DHE 207.  
Application of local anesthetics, nitrous oxide and oxygen sedation. Includes medical emergencies and dental complications.

**DHE 209 Computers and Practice Management /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): Admission to Dental Hygiene Program.  
Introduction to basic computer skills and applications used in dentistry. Includes an overview of computer operations and applications in dentistry. Also includes elements of dental hygiene practice management, records management, time management, periodontal maintenance systems, and clinical practice applications.

**DHE 213 Advanced Periodontal Services /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): DHE 120, 207, 290.  
Application of diagnosis, measurement and treatment of advanced periodontal patients. Includes deep scaling, irrigation and home care education for patients.

**DHE 216 Community and Dental Health Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DHE 120, 207 290.  
Public health dentistry and modalities of dental health education. Includes literature reviews of public health issues with extramural community experiences.

**DHE 290 Clinical Dental Hygiene III /5 cr. hrs./13 periods (1 lec., 12 lab)**

Prerequisite(s): Completion of first year of Dental Hygiene Program.  
Practice of dental hygiene skills with difficult clinical patients and procedures. Includes beginning treatment planning.

**DHE 291 Clinical Dental Hygiene IV /4 cr. hrs./10 periods (1 lec., 9 lab)**

Prerequisite(s): DHE 120, 207 290.  
Advanced treatment planning. Includes application of skills for difficult and special needs patients and extramural rotations to community facilities.

**DHE 298 Advanced Topics in Dental Hygiene: /.25-4 cr. hrs./25-12 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.  
Advanced topics in dental hygiene which reflect new trends and developments, innovations in methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

**DENTAL LABORATORY TECHNOLOGY**

**DLT 101 Dental Morphology /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Consent of program director.  
Development and structure of teeth and construction of dentures. Includes configuration of hard and soft areas of the jaws, as related to denture construction. Emphasis on principles in tooth design and balanced occlusion with regard to normal and abnormal ridge relationship. Plaster sculpture is used in the production of a full complement of anatomical teeth.

**DLT 102 Nonmetallic Dental Materials /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.  
Principles of chemistry and physics as related to dental materials. Products reviewed include gypsum materials, plastic and elastic duplicating materials, denture base materials, acrylic resin teeth, dental waxes, separating media and dental porcelain.

**DLT 103 Complete Dentures /4 cr. hrs./10 periods (1 lec., 9 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.  
Complete examination of the relationship between upper and lower dentures as interpreted on a functional articulator. Includes casting of models, trays, bite blocks, setting up dentures in balanced occlusion, investing, packing, curing and finishing of dentures.

**DLT 104 Dental Laboratory I /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Chemistry and metallurgy of dental alloys, the compositions of plating solutions and principles of electroplating. Includes use of cast gold alloys, abnormal castings, base metal casting alloys, metallographic techniques and wrought metal bars and clasps. A full complement of teeth is sculptured from wax ivory blocks and set up to occlusion. Upper and lower partial frame structures are constructed in cast chromium-cobalt alloy.

**DLT 105 Partial Denture Construction /4 cr. hrs./10 periods (1 lec., 9 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Construction of partial dentures and appliances. Includes wrought metal lingual bars and clasps; investing and soldering techniques of bilateral appliances; processing partial dentures in acrylic in three techniques; fabrication of dies of inlays and abutments; and repair and relining of dentures.

**DLT 106 Orthodontics and Maxillofacial Construction /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Construction and theory of simple orthodontic and maxillofacial appliances. Includes construction utilizing wrought wire and/or cast metal frames as retentive devices and the processing of acrylic to form final appliances.

**DLT 108 Laboratory Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Examination of the principles of Dental Laboratory Management. Includes legal, ethical and historical aspects of the Dental Laboratory, infection control, principle of management and computer usage in the Dental Laboratory. May be taken two times for a maximum of six credit hours.

**DLT 198 Special Topics in Dental Laboratory Technology: /.25-4 cr. hrs./ .25-12 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.

Special topics in dental laboratory which reflect current trends and developments, changes in methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

**DLT 201 Dental Laboratory II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Principles of fixed bridgework, abutments, inlays and crowns. Includes theory of spanning spaces with various types of artificial teeth in complete fixed and cantilever bridgework; importance of stress, function and aesthetics in the design of fixed bridgework; handling of wax patterns, investments, casting

techniques and making dies from impressions; and techniques in waxing, investing, casting inlays, three-quarter crown, full crown and veneers. Tooth carving techniques taught in previous semester are used.

**DLT 202 Dental Metallurgy I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Examination of metals currently used by the dental technician. Includes physical properties of metals, crystal structure, manufacturing processes, theory of alloys, soldering, casting investments and heat treatment of gold alloys.

**DLT 203 Fixed Bridgework /4 cr. hrs./10 periods (1 lec., 9 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Construction of fixed bridgework. Includes waxing, investing and finishing simple and complex inlays, full crowns, veneers and three-quarter crowns; and construction of bridges of various designs utilizing metal, porcelain and plastic, separately or in conjunction with one another.

**DLT 204 Dental Laboratory III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Principles of surveying, design of cast partials and technical applications of metallurgy and engineering principles. Includes composition and physical properties of gold and chromium-cobalt alloys and their working qualities. All types of known designs and principles of retention are used in the construction of removable bridgework.

**DLT 206 Dental Ceramics /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Skill development in porcelain and porcelain-on-metal techniques. Includes composition and physical properties, as well as the fundamentals of manipulating porcelain and metal. Emphasis on low- and high-fusing porcelains, their vitrification, control of form, control of color, design of metal structure and application of stain and glaze.

**DLT 207 Advanced Dental Laboratory Technology /6 cr. hrs./9 periods (3 lec., 6 lab)**

Prerequisite(s): DLT 101 or concurrent enrollment, and consent of program director.

Application of dental laboratory techniques. Includes complete dentures, partial dentures, crown and bridge work, dental ceramics, orthodontics, and maxillofacial appliances.

**DLT 298 Advanced Topics in Dental Laboratory Technology: / .25-4 cr. hrs./25-12 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.

Advanced topics in dental laboratory technology which reflect current trends and developments, innovations in materials, methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

**DESIGN**

**DES 100 Introduction to Design /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to environmental design: theoretical, social, technical and environmental forces that shape the design world. Includes development and training strategies, employment opportunities, the future of design, and the ever-changing impacts of design on society and society on design.

**DES 110 Marketing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles of moving goods and services from producer to consumer. Includes functions of marketing in relation to manufacturing, wholesaling and retailing. (Same as MKT 111.)

**DES 111 Fundamentals of Design /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Elements and theories of design. Includes proportion, scale, balance, harmony, unity and variety, rhythm and emphasis. Projects on specific theories of design will be assigned and evaluated.

**DES 112 Construction Drafting I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Introduction to drafting. Includes developing working drawings for a small single family residence: plot and floor plans, sections, details, and structural, mechanical, electrical, and plumbing plans. Also includes line weights, lettering, and composing working drawing sets.

**DES 122 Graphic Communication I /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Graphic design techniques and processes. Includes proportion, light, depth, texture and pattern.

**DES 122A Graphic Communication I - Module A /1.5 cr. hrs./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Module A constitutes approximately the first half of DES 122.

**DES 122B Graphic Communication I - Module B /1.5 cr. hrs./2 periods (1 lec., 1 lab)**

Prerequisite(s): DES 122A.

Module B constitutes approximately the second half of DES 122.

**DES 151 Structural Concepts /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Structural design concepts, systems and applications for industrial and interior designers. Includes live loads, dead loads, tension, compression, moment, shear and torsional bending. Lightweight structural systems and examples will be examined as they appear in nature and the built environment.

**DES 152 Color and Lighting Theory /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Color design concepts. Includes color theory of vision, light and pigments, color symbolism, perception and psychology in the design of industrial products and interior environments.

**DES 155 Space Planning I /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Theory and methods of information gathering pertaining to any design project. Includes schematic design techniques, programming theory, methods of information gathering and information analysis.

**DES 196 Independent Study in Design /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): Consent of instructor.

Independent readings or special projects. Content to be determined by conference between student and instructor.

**DES 197 Seminar for Designers: /1-8 cr. hrs./1-24 periods (0-8 lec., 0-24 lab)**

Prerequisite(s): Consent of instructor.

Supervised group learning experience of varied durations and locations of design interest. Includes visits to historical or contemporary sites and local field trips and excursions or qualified educational tours abroad. May be taken three times for a maximum of twenty-four credits.

**DES 198 Special Topics in Design: /1-4 cr. hrs./1-10 periods (1-4 lec., 0-9 lab)**

Prerequisite(s): Consent of instructor.

Special and current topics in applied design. Includes topics such as futuristic design, solar studies, environmental applied design, southwestern themes, and preservation of historical environments. Credit may be earned for each topic taken.

**DES 212 History of Design /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History of industrial and interior design work. Includes pre-historic to present-day examples through multi-media presentations and field trips.

**DES 215 Interior Plantscape Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Design and maintenance of the total interior horticultural environment. Includes principles of design, design procedures, and horticultural and business practices. Also includes working with interior landscapers, interior designers, architects and clients, with an emphasis on the creative aspects of the process. (Same as LTP 215.)

**DES 220 Interior Methods and Materials /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Interior design materials, methods and finishes. Includes interior mechanical/lighting systems, specifications for materials and finishes and sample boards. The CSI Masterformat (Construction Specifications Institute) will be referenced to specify all interior finishes and surface treatment applications.

**DES 222 Graphic Communication II /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): DES 122.

Advanced graphic techniques and processes. Includes 2D and 3D graphic techniques, application of color technique and principles, model building and continued sketchbook and portfolio development.

**DES 230 Business/Professional Practices /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Professional business principles and practices for the industrial and interior designer. Includes basic professional services of programming, conceptual design, design development, contract administration, documentation, specifications and project management and evaluation.

**DES 255 Space Planning II /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): DES 155.

Creative and technical use of design principles. Includes theory and practice of interior design applied to specific situations and problems in the design environment.

**DES 256 Human/Environmental Factors /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): DES 122.

Industrial and interior design environmental issues. Includes human design factors, toxicity in the built environment, material recycling and issues of human health, safety and welfare.

**DES 289 NCIDQ Review /1-3 cr. hrs./1-3 periods (1-3 lec.)**

Prerequisite(s): Consent of instructor.

Preparation for the National Council for Interior Design Qualification examination. Includes review of design concepts, building codes, space planning, plumbing, furniture selection, lighting, HVAC, and other topics appropriate for this exam.

**DRAFTING****DFT 100 Print Reading and Sketching for Manufacturing /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): None.

Principles and concepts of print reading and technical freehand sketching. Includes common print and manufacturing terms, print fundamentals and standards, freehand sketching applications, and print analysis.

**DFT 105 Manufacturing Processes I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Properties and applications of materials. Includes production systems, production materials, ferrous and nonferrous alloys, nonmetallic materials, casting processes, powder metallurgy, and hot and cold working processes.

**DFT 110 Manufacturing Processes II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Equipment and tooling applications. Includes measuring, gaging, metal cutting, turning and boring, drilling and reaming, milling, broaching, abrasive machining, and thread cutting and forming.

**EARLY CHILDHOOD EDUCATION****ECE 106 The Growing Years /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of forces which shape the growing child. Includes the interplay of biological factors, human interaction and social structure from earliest womb environment into adolescence.

**ECE 107 Human Development and Relations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 112 or concurrent enrollment.

Analysis of the elements which affect growth and development throughout the life span. Includes hereditary, familial, environmental, and cultural influences.

**ECE 108 Literature/Social Studies for Children /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of principles, materials, and techniques for the selection and evaluation of children's literature and social studies materials. Includes incorporating an appreciation of other cultures, and planning and implementing developmentally appropriate activities.

**ECE 110 Communication and Language: Early Literacy for Children /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study of oral and written language acquisition and emergent literacy.



## EARLY CHILDHOOD EDUCATION

Includes principles, methods, and current teaching techniques. Also includes an examination of cultural diversity, instructional material, assessments, and computer technology.

### **ECE 111 Special Education for Children /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 112 or concurrent enrollment, and WRT 100.  
History, philosophy, and current trends in special education. Includes identification and characteristics of children with special needs, assessment procedures, referral services, and available resources. Also includes the role of the teachers, parent(s), and family in effecting appropriate instructional techniques and environmental modifications.

### **ECE 112 Music/Art for Children /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.  
Survey of principles, materials, techniques, and resources for teaching music/art to children. Includes planning, implementing, and evaluating developmentally appropriate activities. Also includes a compilation of resource materials.

### **ECE 114 Effective Parenthood /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.  
Identification and discussion of determinants of positive child rearing practices. Includes physical, cognitive, personality, and moral development. Also includes parenting skills and positive guidance techniques for conflict resolution and effective interpersonal relationships.

### **ECE 117 Child Growth and Development /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 112 or concurrent enrollment, and WRT 100.  
Analysis of concepts and issues in growth and development of children. Includes prenatal factors, the birth process, and determinants of physical, cognitive, social, cultural, emotional, and moral development through adolescence.

### **ECE 120 Supervision and Administration of Early Childhood Programs /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 082, REA 112, WRT 100.  
Analysis of elements for planning, implementing, maintaining, and evaluating early childhood education programs. Includes regulations, health and safety issues, and staff selection, development, and supervision. Also includes management of facilities, budget, equipment, supplies, and arranging environment.

### **ECE 124 Math/Science for Children /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 082.  
Theories, methods, and techniques for teaching math and science. Includes selection, development, and presentation of instructional materials with an integrated curriculum approach. Also includes computer applications.

### **ECE 126 Teaching Techniques /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 112 or concurrent enrollment, and WRT 100.  
Introduction to theory and application of guidance techniques and classroom

management. Includes observing, recording, and interpreting behavior, behavior modification, cultural influences, and development of positive attitudes and self concept. Also includes supervised field experience.

### **ECE 128 Preschool and Child Care /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.  
Examination and acquisition of competencies required by child care personnel in educating and caring for infants, toddlers, and preschoolers in early childhood programs. Includes observing and recording, age-appropriate activities, discipline, problem-solving, health and safety, guiding language and action, special needs, cultural awareness, and essential curricula. Also includes a supervised field project.

### **ECE 130 School-Age Child Care and Program Development /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.  
Examination of child care programs for school-age children, including before and after school care, full day and recreational programs. Encompasses activities, leadership program planning, discipline, safety, problem solving, ethics, standards, cultural awareness, special needs, partnership, resources, supervising staff, and marketing. Also includes a supervised field experience project.

### **ECE 198 Special Topics in Early Childhood Education: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.  
Special topics in early childhood education which reflect current trends and developments, new methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

### **ECE 199 Co-op Related Class in ECE /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

### **ECE 199 Co-op Work in ECE /2 cr. hrs./10 periods (10 lab)**

See Cooperative Education section for description.

### **ECE 296 Independent Studies in Early Childhood Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Departmental approval.  
Students independently continue their development in Early Childhood Education under the guidance of a faculty member. May be taken two times for a maximum of six credit hours.

### **ECE 299 Co-op Related Class in ECE /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

### **ECE 299 Co-op Work in ECE /2 cr. hrs./10 periods (10 lab)**

See Cooperative Education section for description.



## ECONOMICS

### ECN 136 Personal and Family Finance /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Principles which assist individuals and families to choose among financial alternatives to meet their needs. Includes choosing a career, making major purchases, sources of consumer and financial information, and effective use of income.

### ECN 200 Basic Economic Principles /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): MAT 092.

Economic theory as applied to individual decision-making units (microeconomics) and as applied to the operation of the economy as a whole (macroeconomics). Includes economic decision making, economic systems, supply and demand model, price determination, elasticity, household income, business ownership, cost-benefit analysis, profit maximization, production functions and costs, competition and market structures, goals and problems of the macroeconomy, foundations of the macroeconomy, fiscal policy and budgets, money, the role of financial institutions and the Federal Reserve, money creation, and monetary theory and policy. Not open to students who have taken or are taking ECN 201 and/or ECN 202.

### ECN 201 Microeconomic Principles /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): MAT 092.

Economic theory as applied to individual decision-making units. Includes economic decision making, economic systems, consumer demand, producer supply, price determination, elasticity, household income, business ownership, cost-benefit analysis, profit maximization, production functions and costs, competition and market structures, government in the market economy, labor markets, and income distribution.

### ECN 202 Macroeconomic Principles /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): MAT 092.

Economic theory as applied to the operation of the economy as a whole. Includes economic decision making, economic systems, supply and demand model, goals and problems of the macroeconomy, foundations of the macroeconomy, fiscal policy and budgets, money, the role of financial institutions and the Federal Reserve, money creation, monetary theory and policy, and the assessment of goals, tools, and policies of macroeconomics.

### ECN 298 Advanced Topics in Economics: /1-3 cr. hrs./1-3 periods (1-3 lec.)

Prerequisite(s): Consent of instructor.

Advanced topics in economics which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

## EDUCATION

### EDU 100 Principles of Bilingual Education /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Examination of basic principles of bilingual education. Includes philosophy, history, rationale, legislation and models.

### EDU 102 Dimensions of Multicultural Education /.25-1 cr. hr./ .25-1 period (.25-1 lec.)

Prerequisite(s): Consent of instructor.

Basic concepts of multicultural education with emphasis on race, ethnicity, gender, class, age, disability, and religion. Includes demographic differences among individuals, concepts and experiences of stereotyping and discrimination, and origins of stereotypes.

### EDU 103 Teaching Students with ADD/ADHD /.25-1 cr. hrs./ .25-1 periods (.25-1 lec.)

Prerequisite(s): Consent of instructor.

Strategies for working with children with attention difficulties. Includes overview of ADD/ADHD, diagnostic procedures, most common treatments, laws pertaining to servicing ADD/ADHD, strategies for the classroom, and overview of resources and organizations.

### EDU 104 Teaching Mathematics Through Problem Solving, K-8 / 2 cr. hrs./2 periods (2 lec.)

Prerequisite(s): None.

An in-depth study of the teaching of mathematics in grades kindergarten through eight. Includes problem solving in all strands of the elementary mathematics curriculum for the developing and understanding of mathematical concepts and skills.

### EDU 105 Teaching Mathematics Through Problem Solving, 9-12 / 2 cr. hrs./2 periods (2 lec.)

Prerequisite(s): None.

An in-depth study of the teaching of mathematics in grades nine through twelve. Includes problem solving in all courses of the secondary mathematics curriculum for the development of mathematical reasoning and application of mathematics to problem-solving situations.

### EDU 108 Music, Art, and Drama for School-Age Child Care /3 cr. hrs./ 3 periods (3 lec.)

Prerequisite(s): Consent of instructor.

Examination of principles, techniques, and resources for creating age-appropriate projects and activities in music, art, and drama. Includes multiculturalism and social skills.

**EDU 109 Language, Arts, Science, and Math for School-Age Child Care /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Synthesis of principles for development of age-appropriate multidisciplinary activities. Includes the evaluation of commercially produced programs and software.

**EDU 114 Teaching Math Through Problem Solving II for K-8 /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): EDU 104.

Advanced concepts for the teaching of math in grades kindergarten through eighth grade (K-8). Focuses on strengthening an understanding of how to teach math through problem solving and on the sequence of concepts and skills for each strand of the K-8 curriculum.

**EDU 118 Literacy, Literature, and Learning in the Bilingual Classroom /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Teaching techniques using literature in the bilingual classroom. Includes strategic thinking skills, teaching themes, questioning, creative thinking, problem-solving strategies, and teaching skills through literature.

**EDU 124 Teaching Math Through Problem Solving III for K-8 /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Consent of instructor.

Synthesizing the content presented in Math through Problem Solving I and II. Includes assessment procedures, review of probability and functions, developing instructional units, integrating writing as a vehicle for learning and assessment, concepts of ratio, scale, measurement and proportional reasoning, and synthesizing experiences and ideas.

**EDU 125 Design and Delivery of Instruction for the 21st Century / .5-3 cr. hrs./5-3 periods (.5-3 lec.)**

Prerequisite(s): Consent of instructor.

Fundamentals of instructional design applied to teaching students in traditional or non-traditional time formats and delivery systems. Includes the following individual modules: Designing Good Instruction, Using Visuals to Improve Instruction, Improving Vocal Performance, Using Interactive, Participatory Techniques, Teaching and Learning Styles, Using the Internet for Instruction, Developing Graphics for the Web, Using Multimedia for Instruction, Introduction to PowerPoint, Introduction to ToolBook, Using the Interactive Classroom, and Designing an Independent Learning Package.

**EDU 126 Introduction to Multimedia /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Comprehensive introduction to multimedia design and production. Includes microcomputer basics, project planning and design principles for multimedia as well as basic digital graphics, audio, and video editing. Students will

develop their own multimedia projects using Microsoft PowerPoint, the World Wide Web (HTML), and Asymetrix ToolBook.

**EDU 127 Introduction to Asymetrix Tool Book /5-3 cr. hrs./5-3 periods (.5-3 lec.)**

Prerequisite(s): Consent of instructor.

Introduction to the Asymetrix Tool Book multimedia authoring system. Includes overall multimedia project design, creating and manipulating Tool Book Objects, creating animations, importing graphics, sound, and video files, as well as an introduction to OpenScript for customizing Tool Book applications.

**EDU 128 Teaching with the Internet /1 cr. hr./1.5 periods (1 lec., .5 lab)**

Prerequisite(s): Consent of instructor.

Methods of integrating Internet resources into the classroom. Includes Internet overview, World Wide Web (WWW) catalogs and search engines, integrating WWW resources into the curriculum, lesson plan, project and field trip sites, educational news sources, special interest sites, library catalogs, magazine and reference databases, filtering and copyright issues, and citing electronic resources.

**EDU 129 How to Write Competitive Grant Proposals /5-3 cr. hrs./5-3 periods (.5-3 lec.)**

Prerequisite(s): Consent of instructor.

Strategies to develop effective, competitive grant proposals. Includes identifying and qualifying funding sources, interpreting and utilizing the funding agency's solicitations, developing the proposal format, and writing the proposal narrative.

**EDU 130 Legal Issues in Education /5-3 cr. hrs./5-3 periods (.5-3 lec.)**

Prerequisite(s): Consent of instructor.

Introduction to legal issues in an educational environment for students, teachers, and staff. Includes Affirmative Action (AA), Equal Employment Opportunity (EEO), Americans with Disabilities Act (ADA), and sexual harassment legal concepts, the rights of students, staff, and teachers, identifying and defining situations, forms of discrimination, techniques to prevent discrimination and sexual harassment, strategies to increase awareness, confidentiality and Right-to-Know, and internal and external processes.

**EDU 131 Latin American Art for Teachers /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Latin American history, language, art, and architecture for K-16 instructors. Includes current events, language and customs, and how they are related to the art of Latin American cultural awareness through art. Also includes an emphasis on methods of integration for lesson plans.

**EDU 132 Instructional Applications of the Internet /1 cr. hr./1.5 periods (1 lec., .5 lab)**

Prerequisite(s): Consent of instructor.

Integrating Internet services into the instructional process. Includes an introduction to the Internet, using the Internet, using the World Wide Web,

instructional design for Computer-Mediated Communications (CMC), and educational issues of computer-mediated communications, and new technologies.

**EDU 133 Cooperating Teachers: Mentoring Student Teachers /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Consent of instructor.

Techniques to prepare classroom teachers to mentor student teachers. Includes phases of student teaching, student teaching roles and characteristics, responsibilities, beliefs and philosophy, adult learners, and issues and problems.

**EDU 134 Survival Strategies for the Substitute Teacher /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Consent of instructor.

Techniques to prepare substitute teachers for the tasks they face in elementary, middle school and high school classrooms. Includes classroom management, interpreting and implementing lesson plans, and district procedures and policies.

**EDU 135 Math Applications Across the Curriculum for Instructors of K-8 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Applying mathematical concepts to non-mathematical disciplines for grades K-8. Includes classroom management, curriculum in the classroom and the teacher as a learner. May be taken four times for a maximum of four credit hours.

**EDU 140 Instructional Methodology /1-3 cr. hrs./1-3 periods (1-3 lec.)**

Prerequisite(s): None.

Methods of instruction designed to improve teaching skills. Includes preparing goals and objectives, analyzing material to be taught, building the lesson plan, using visual aids, and organizing and presenting materials to fit classroom time frames.

**EDU 141 Techniques for Teaching Science K-12 /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None.

Techniques for teaching a classroom unit in science for the classroom instructor. Includes lab techniques and strategies, projects appropriate to grade level, utilizing resources in the community, preparing laboratory apparatus, introduction to computers and laboratory software, developing instructional strategies, interpreting results, and implementing ideas for classroom instruction.

**EDU 150 Teaching Critical and Creative Thinking /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Background, theory and techniques of instruction to facilitate the development of critical and creative thinking skills. Includes locating prepared materials, developing content-specific exercises on various skill levels, integrating

skills into general course content, and application to various teaching fields.

**EDU 151 Teaching Developmental Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Teaching techniques for instructors of developmental education courses. Includes background theory and instructional techniques to support under-prepared students, by creating an environment that encourages critical thinking and responds to differences in learning style, age, gender, and culture. Also includes administrative issues affecting the delivery of developmental education.

**EDU 161 The Arizona Community College /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of the philosophy and functions of the Arizona community college. Includes history, mission, goals, legislation, curriculum and instruction, board and administration functions, student development, and continuing education.

**EDU 198 Special Topics in Education: /5-4 cr. hrs./5-12 periods (variable lec., variable lab)**

Prerequisite(s): Consent of instructor.

Special topics in education for classroom instruction. Includes current specialized materials to meet classroom needs for local educators. Credit may be earned for each topic taken.

**EDU 200 Introduction to Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 112 or concurrent enrollment, and WRT 100.

Survey of historical and philosophical development in education. Includes current theories, multi cultural education, and the role of local, state, and national government. Also includes supervised exposure to educational settings. The purpose of this course is to provide a realistic view of the teaching profession in a variety of educational settings in order to provide a basis for making the decision to pursue teaching as a career.

## EMERGENCY MEDICAL TECHNOLOGY

**EMT 058 Refresher Training for EMT /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): EMT 100 and graduation from the basic program at least one year prior to enrollment.

For students in the Emergency Medical Services field who must meet refresher training requirements for recertification. May be taken nine times for a maximum of eighteen credit hours.

**EMT 070 Basic Cardiac Life Support /1.5 cr. hr./1.5 period (.5 lec.)**

Prerequisite(s): None.

Principles and techniques of basic cardiac life support. Includes techniques of airway care and cardiopulmonary resuscitation and common types of equipment used in basic cardiac life support. Also includes an introduction to the pathogenesis of coronary artery disease, electric shock, drowning and sudden death. The course is designed to train allied health personnel and other interested individuals. Upon course completion, the student will have completed requirements to be issued a Healthcare Provider CPR card through the American Heart Association.

**EMT 100 Basic Emergency Medical Technology /9 cr. hrs./11 periods (8 lec., 3 lab)**

Prerequisite(s): Students must be 18 years of age when class begins.

Students must have a current cardiopulmonary resuscitation (CPR) card at the Healthcare Provider level.

Techniques of pre-hospital emergency medical care for the emergency medical technician. Includes symptoms of illnesses, injuries, medical emergencies, appropriate medical techniques, and ambulance operations.

**EMT 110 First Responder /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Techniques in pre-hospital emergency care appropriate to the First Responder 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.

**EMT 158 Transition Training for EMT /1.5 cr. hrs./2.5 periods (1 lec., 1.5 lab)**

Prerequisite(s): Currently certified as EMT-B by the State of Arizona.

Review of current techniques in pre-hospital emergency care for the basic emergency medical technician. Includes signs and symptoms of illness, injuries, medical emergencies, appropriate medical techniques, and ambulance operations.

**EMT 159 Cardiopulmonary Resuscitation: Healthcare Provider /1.5 cr. hr./ .5 period (.25 lec., .25 lab)**

Prerequisite(s): None.

Introduction to the techniques required to provide cardiopulmonary resuscitation 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. Course meets American Heart Association guidelines for the Healthcare Provider level.

**EMT 170 Extrication/Rescue Techniques /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

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.

**EMT 198 Special Topics in EMT: /1-4 cr. hrs./1-12 periods (0-4 lec., 0-12 lab)**

Prerequisite(s): Consent of instructor.

Selected topics in Emergency Medical Technology which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**EMT 201 Pre-Hospital Environment 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Acceptance into the Paramedic Program

Introduction to the Paramedic career field. Includes roles and responsibilities, EMS components and communications, medical/legal considerations, and rescue/vehicle extrication. Also includes major incident response and stress management.

**EMT 202 Paramedic Preparation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Acceptance into the Paramedic Program.

Foundations of skills and principles in preparing to be a paramedic. Includes medical terminology and the human body structure. Also includes phases of pre-hospital assessment, scene size-up, and primary assessment.

**EMT 203 Advanced Airway Management /2 cr. hrs./2 periods (1 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Techniques for life support in the pre-hospital setting. Includes airway management, oxygen therapy, respiratory system, pathophysiology and assessment.

**EMT 204 Shock and Fluid Therapy /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Elements of shock and development of shock management techniques. Includes anatomy and physiology of body systems affected by shock, and shock components. Also includes patient assessment and the relationship between shock and intravenous therapy.

**EMT 205 Advanced Life Support Pharmacology /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program

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 patients in an emergency setting, and pharmacological mathematics.

**EMT 205A Advanced Life Support Pharmacology - Module A /1 cr. hr./ 1.5 periods (1 lec., .5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program

Elements of pharmacological agents and their administration. Includes basic pharmacological background and actions of drugs.



**EMT 205B Advanced Life Support Pharmacology - Module B /1 cr. hr./ 1.5 periods (1 lec., .5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program

Continuation of EMT 205A. Includes pharmacological regulations, human body systems, and pharmacokinetics. Also includes medications for patients in an emergency setting, and pharmacological mathematics.

**EMT 206 Pathophysiology of Traumatic Injuries I /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Acceptance into the Paramedic Program.

Introduction to traumatic injury and intervention in the pre-hospital setting. Includes facts about head, neck, and spine injuries, anatomy and physiology, assessment and management. Also includes basic trauma facts, triage protocols, kinetics, and different types of trauma.

**EMT 207 Pathophysiology of Traumatic Injuries II /1 cr. hrs./1 periods (1 lec.)**

Prerequisite(s): Acceptance into the Paramedic Program.

Continuation of EMT 206. Emphasis on soft tissues and burn injuries. Includes anatomy and physiology, patient assessment, and pathophysiology of injuries. Also includes techniques of management and specific injuries.

**EMT 208 Advanced Life Support Medical Emergencies I: Respiratory / 2 cr. Hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Techniques for life support in the pre-hospital setting. Includes airway management, oxygen therapy, and the respiratory system. Also includes pathophysiology and techniques of management.

**EMT 209 Advanced Life Support Medical Emergencies II: Cardiovascular /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Advanced life support techniques in the assessment and management of cardiovascular emergencies. Includes anatomy and physiology, and recognition of dysrhythmias.

**EMT 210 Advanced Life Support Medical Emergencies III: Endocrine, Nervous System, Acute Abdomen, and Anaphylaxis /2 cr. hrs./2 periods (1.5 lec., .5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Advanced life support techniques using pre-hospital approaches to the recognition and intervention of medical emergencies related to the nervous system, acute abdomen, and anaphylaxis. Includes anatomy and physiology, assessment, pathophysiology, and management. Also includes the dialysis patient, the immune system, and allergies.

**EMT 211 Advanced Life Support Emergency IV: Toxicology, Infectious Diseases, Environmental Injuries, and Geriatrics /2 cr. hrs./2 periods (1.5 lec., .5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Advanced life support techniques using pre-hospital approaches to the recognition and intervention of medical emergencies related to toxicology, infectious disease, environmental injuries, and geriatrics. Includes poisoning, drug overdose and substance abuse, and alcohol abuse. Also includes transmission of infectious diseases, thermal disorders, near-drowning and drowning, nuclear radiation, diving emergencies, and the elderly patient.

**EMT 212 Pathophysiology and Management of Gynecological, Obstetrical, and Neonatal Emergencies /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Advanced life skills approaches to gynecological, obstetrical, and neonatal emergencies. Includes anatomy and physiology, assessment of the gynecological patient, and gynecological emergencies. Also includes the prenatal period, the puerperium, emergency management of the neonate, routine care of the newborn, the premature neonate, the distressed neonate, and neonatal transport.

**EMT 213 Pathophysiology and Management of the Pediatric Patient / 2 cr. hrs./2 periods (1 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Advanced life support skills approaches to the assessment and management of medical and traumatic emergencies of the pediatric patient. Includes pediatric advanced life support.

**EMT 214 Emotional Aspects of Illness and Injury /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

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.

**EMT 215 Paramedic Practicum: Clinical /3 cr. hrs./15 periods (15 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

In-hospital clinical procedures for the paramedic. Includes placement in the clinical (hospital) setting for supervised skills application with real patients.

**EMT 215A Paramedic Practicum: Clinical - Module A /1 cr. hr./5 periods (5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

First of three modules of in-hospital clinical procedures for the paramedic. Includes placement in the clinical (hospital) setting for supervised skills application with real patients.

**EMT 215B Paramedic Practicum: Clinical - Module B /1 cr. hr./5 periods (5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Second of three modules of in-hospital clinical procedures for the paramedic. Includes placement in the clinical (hospital) setting for supervised skills application with real patients.

**EMT 215C Paramedic Practicum: Clinical - Module C /1 cr. hr./5 periods (5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Third of three modules of in-hospital clinical procedures for the paramedic. Includes placement in the clinical (hospital) setting for supervised skills application with real patients.

**EMT 216 Paramedic Practicum: Vehicular /5 cr. hrs./25 periods (25 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Pre-hospital emergency medical procedures for the paramedic. Includes skills appropriate to the paramedic scope of practice in the pre-hospital setting according to established protocols.

**EMT 216A Paramedic Practicum: Vehicular - Module A /1 cr. hr./5 periods (5 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

First of three modules of pre-hospital emergency medical procedures for the paramedic. Includes skills appropriate to the paramedic scope of practice in the pre-hospital setting according to established protocols.

**EMT 216B Paramedic Practicum: Vehicular - Module B /2 cr. hr./10 periods (10 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Second of three modules of pre-hospital emergency medical procedures for the paramedic. Includes skills appropriate to the paramedic scope of practice in the pre-hospital setting according to established protocols.

**EMT 216C Paramedic Practicum: Vehicular - Module C /2 cr. hr./10 periods (10 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Third of three modules of pre-hospital emergency medical procedures for the paramedic. Includes skills appropriate to the paramedic scope of practice in the pre-hospital setting according to established protocols.

**EMT 230 Emergency Cardiac Care /3 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Introduction to all levels of emergency care providers with basic electrocardiographic (EKG) rhythm analysis. Includes interpretation and related care in a clinical and pre-hospital setting. Required content for the identification and treatment of cardiac emergencies.

**EMT 232 Pediatric Advanced Life Support /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Education and training in techniques of Pediatric Advanced Life Support. Includes endotracheal intubation, defibrillation, dysrhythmia recognition, pharmacology, and intra-osseous infusion. Required for American Heart Association provider approval and validation.

**EMT 240 Trauma Management /3 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Introduction to critical skills necessary to manage the trauma patient and the emergency scene through the Incident Command System (ICS). Includes emergency medical skills by focusing on emergency care interventions. Also includes exposure to patient assessment, initial treatment, resuscitative techniques, patient stabilization, and transport of the patient to the emergency care facility.

**EMT 295 Independent Research in Emergency Medical Technology /2 cr. hrs./3 periods (3 lab)**

Prerequisite(s): Acceptance into the Paramedic Program.

Independent research in advanced pre-hospital care to be arranged by instructor.

**ENGINEERING****ENG 102 Problem-Solving and Engineering Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): MAT 220 or concurrent enrollment and high school physics. Engineering design, effective team participation, and career preparation. Includes participation in hands-on design projects, developing an education and career plan, and initiating development of the personal and management skills necessary for life-long learning.

**ENG 120 Engineering Graphics /3 cr. hrs./7 periods (1 lec., 6 lab)**

Prerequisite(s): MAT 108 or high school geometry.

Principles and techniques of engineering graphics. Includes freehand technical sketching, instrument working drawings, projection, descriptive geometry and applications to engineering space problems.

**ENG 130 Elementary Surveying /3 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MAT 151 and 182, or 187.

Basic principles and techniques of surveying. Includes measurement of horizontal distances, use of surveying instruments, angle measurements, traverse surveys and computations, topographics, government land surveys and solar observations.



**ENG 170 Problem-Solving Using Computers /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENG 102.

Design of problem-solving algorithms. Includes implementation in a structured programming language and application to engineering.

**ENG 210 Engineering Mechanics: Statics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PHY 210.

Co-requisite(s): Concurrent enrollment in MAT 241.

Engineering analysis of static mechanical systems. Includes vector algebra, equilibrium, momentum, couples, centroids, trusses, machines, friction and equivalent force systems.

**ENG 220 Engineering Mechanics: Dynamics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENG 210.

Engineering analysis of dynamic mechanical systems. Includes rectilinear motion, curvilinear motion, kinetics of rigid bodies, plane motion of rigid bodies and mechanical vibrations.

**ENG 230 Mechanics of Materials /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENG 210.

Analysis of mechanical properties of materials and their engineering applications. Includes material behavior, external forces on rigid and elastic bodies, stress, strain, load analysis and design factors.

**ENG 240 Introduction to Digital Systems /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENG 102.

Basic principles of digital systems. Includes digital coding of information, basic logic design, number systems, sequential circuit design and computer organization.

**ENG 241 Microprocessors /3 cr. hrs./5 periods (2 lec., 3 lab.)**

Prerequisite(s): ENG 240.

Introduction to microprocessor programming. Includes assembly language, input/output, stacks and interrupts.

**ENG 250 Numerical Analysis for Engineers /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENG 170, MAT 231.

Applications of numerical methods and computer programming techniques for the creation of mathematical models of engineering systems.

**ENG 260 Elements of Electrical Engineering /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PHY 216, MAT 231.

Introductory survey of the electrical engineering discipline with emphasis on electrical power applications. Includes electrical quantities, components, meters, capacitors, inductors, and transients. Also includes DC resistive network analysis, magnetic circuits, transformers, motors, and generators.

**ENG 261 Elements of Electronics /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENG 260.

Introductory survey of the principles of electronics and instrumentation. Includes semiconductor devices, operational amplifiers, digital logic, microprocessors, transducers and analog, digital and hybrid applications.

**ENG 274 Digital Logic /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENG 102.

Introduction to the theory and design of digital logic circuits. Includes number systems, coding of information, Boolean algebra, combinational logic circuit design, sequential circuit design, and register transfer system design.

**ENG 275 Computer Programming for Engineering Applications /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENG 102.

Programming in C with emphasis on numerical applications in engineering. Includes fundamentals of C language, analysis of errors inherent in floating point representations and calculations, structured program design, and applications to solving engineering problems.

**ENG 282 Basic Electric Circuits /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): ENG 102.

Co-requisite(s): Concurrent enrollment in MAT 262.

Basic principles of linear circuits and components. Includes DC, transient and sinusoidal steady-state analysis of passive circuits in elementary configurations. Also includes analysis of frequency selective circuits using the transfer function concept and Bode diagrams.

**ENGLISH AS A SECOND LANGUAGE**

The ESL curriculum is designed for bilingual and foreign students to help them develop proficiency in oral and written English by practicing basic skills in listening to, speaking, reading and writing American English. Students will be placed in the program according to assessment test results and teacher evaluation.

**ESL 040 English for Beginners /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Beginning level English for students with no previous knowledge of English. Includes survival skills in day-to-day situations, basic language skills, listening, reading, and writing.

**ESL 061 Elementary Listening, Speaking, and Pronunciation /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): Placement by ESL assessment test.  
Principles of good listening and speaking skills, and standard pronunciation of American English. Includes basic conversational skills and sound and rhythm patterns.

**ESL 062 Elementary Grammatical Patterns I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Placement by ESL assessment test or consent of instructor.  
Instruction and practice in the use of English grammatical patterns at the elementary level in both spoken and written English. Includes the development of basic vocabulary in daily life.

**ESL 063 Elementary Grammatical Patterns II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 062 with grade of C or better, placement by ESL assessment test, or consent of instructor.  
Continuation of ESL 062. Instruction and practice in the use of English grammatical patterns at the higher elementary level in both spoken and written English.

**ESL 064 Elementary Reading /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Placement by ESL assessment test or consent of instructor.  
Beginning reading course designed to develop basic language and reading skills through a wide variety of readings. Includes interpretation of simplified narrative and descriptive passages on familiar and unfamiliar topics including American culture. Also includes vocabulary development through contextual clues.

**ESL 065 Elementary Writing /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 063 with a grade of C or better, placement by ESL assessment test, or consent of instructor.  
Elementary writing instruction and practice in grammar and usage, mechanics, punctuation, and sentence writing. Includes practical writing tasks for personal and everyday life.

**ESL 071 Intermediate Listening, Speaking, and Pronunciation /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): ESL 061 or 063 or placement by ESL assessment test.  
Intermediate development of skills in listening, speaking and pronunciation. Includes a review of grammatical structures and sound patterns. May be taken two times for a maximum of six credit hours.

**ESL 072 Intermediate Grammatical Patterns I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 063 with a grade of C or better, placement by ESL assessment test, or consent of instructor.  
Instruction and practice in the use of English grammatical patterns at the intermediate level in both spoken and written English. Emphasizes correct use of verb tenses.

**ESL 073 Intermediate Grammatical Patterns II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 072 with a grade of C or better, placement by ESL assessment test, or consent of instructor.  
Continuation of ESL 072. Includes verb tense review at intermediate level. Also includes extensive instruction and practice in correct use of modal verbs, verb complements, and phrasal verbs in both spoken and written English.

**ESL 074 Intermediate Reading /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 064 with grade of C or better, placement by ESL assessment test, or consent of instructor.  
Intermediate reading course designed for continued development of reading strategies for higher level passages on familiar and unfamiliar topics. Includes general comprehension of main ideas, specific information, understanding structural details, and briefly summarizing reading passages. Also includes greater understanding of multiple meanings and connotations in vocabulary development and cultural issues.

**ESL 075 Intermediate Writing /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 073 with a grade of C or better, placement by ESL assessment test, or consent of instructor.  
Intermediate writing instruction and practice in grammar, usage, sentence structure, punctuation, and paragraph development. Includes writing for both personal and academic purposes. Also includes techniques for pre-writing, revision, and editing.

**ESL 078 English on the Job /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Completion of ESL 063 with a grade of C or better; placement by ESL placement test, or consent of instructor.  
General workplace communication skills for intermediate ESL students. Includes improvement of communication with coworkers and supervisors through practice in integrated language skills and discussion of intercultural concepts. Also includes strategies for problem solving on the job.

**ESL 079 American Culture Through Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.  
Intermediate to advanced ESL reading skills through literary selections in English. Includes social and historical American culture, reading skill enhancement, vocabulary, structure and style, and writing activities and discussion.

**ESL 081 Advanced Listening, Speaking, and Pronunciation /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): ESL 072 or placement by ESL assessment test.  
Advanced course designed to develop fluency in American English pronunciation. Includes the use of oral reading materials, conversational practice, and laboratory exercises.

**ESL 082 Advanced Grammatical Patterns I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 073 with a grade of C or better, placement by ESL assessment test, or consent of instructor. Instruction and practice in the use of English grammatical patterns at the advanced level in both spoken and written English. Emphasizes correct use of verb forms in written English, including the perfect tenses, the passive voice, and verb complements. Also includes advanced study of the use of prepositions and articles.

**ESL 083 Advanced Grammatical Patterns II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 082 with a grade of C or better, placement by ESL assessment test, or consent of instructor. Continuation of ESL 082. Emphasizes correct use of subordinate clauses in complex sentences. Special emphasis is given to written English in academic contexts. Also includes continued study of the use of prepositions and articles.

**ESL 084 Advanced Reading /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 074 with grade of C or better, placement by ESL assessment test, or consent of instructor. Advanced reading course designed for continued development of overall reading proficiency through the articles and other forms of reading (charts, graphs, and illustrations) from a variety of publications on cultural and academic topics. Includes strategies for main ideas, supporting details, summary writing, making inferences, determining meaning from context, speed reading, and critical thinking skills.

**ESL 085 Advanced Writing /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Completion of ESL 083 with a grade of C or better, placement by ESL assessment test, or consent of instructor. Advanced writing instruction and practice in grammar, usage, sentence structure, punctuation, and short essay development. Includes academic writing tasks such as paraphrasing and summarizing. Also includes techniques for pre-writing, revision, and editing.

**ESL 089 English with Ease /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ESL 074 or placement by ESL assessment test. Conversational course for advanced ESL students to promote fluency in the English language. Includes vocabulary development, listening and reading comprehension, fluency practice, and retention and production of idiom and set expressions in a variety of contexts.

**ESL 091 Academic Presentation Skills /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ESL 081 and 084 or placement by ESL assessment test. Preparation for active participation in academic college courses. Includes development of discussion and presentation skills and fluency in pronunciation.

**ESL 093 Comprehensive TOEFL Preparation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ESL 081, 084, 085 or placement by ESL assessment test. Comprehensive TOEFL test preparation for ESL/EFL students. Includes detailed analysis and intensive practice for all four test components: listening, grammar, reading, and the Test of Written English (TWE). Also includes test-taking strategies on both timed and untimed practice tests.

**ESL 094 Academic Reading and Writing /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ESL 083 and 084 or placement by ESL assessment test. Advanced reading and writing for academic college coursework. Includes strategies for reading and comprehending academic texts and for writing academic papers. Also includes integration with oral language development and library research skills.

**ESL 098 Topics in ESL: /1-3 cr. hrs./1-3 periods (1-3 lec.)**

Prerequisite(s): Consent of instructor. Selected topics in ESL which reflect current issues, trends, and technologies.

**ENVIRONMENTAL TECHNOLOGY****ENV 083 Environmental Issues for Realtors /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None. Technical and legal issues concerning the sale of commercial, industrial, and residential properties that may involve "environmental damage." Includes detailed Environmental Phase I Site Assessments. Not for ENV majors. (Same as RLS 083.)

**ENV 086 Household Environmental Awareness /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None. Exploration of environmental issues that face households in modern society. Includes home energy generation and conservation, solar power, water conservation, recycling, composting, food production, alternative home-building techniques, and home chemical use/indoor air pollution. Not for ENV majors.

**ENV 087 Chemical Handling for Exterminators /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None. Chemical storage, transportation, and disposal of "cidal" agents in conjunction with all applicable state and federal regulations, including a regulatory overview, audit survival tips, and individual safety issues, as well as state licensing information. Not for ENV majors.

**ENV 089 Basic Skills for Environmental Technology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic skills in mathematics, chemistry, and biology for students entering the environmental technology programs. Includes basic principles in mathematics, chemistry, and environmental biology.

**ENV 100 Introduction to Environmental Technology /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): REA 112 and MAT 082, or ENV 085.

Overview of society and its impact on the environment including environmental regulations. Includes exploration of biological and physical sciences, soil and water resources, and air quality. Also includes the technologies for resource and waste management, and environmental and personnel protection.

**ENV 102 Hydraulics /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ENV 100 or concurrent enrollment, MAT 092 or concurrent enrollment.

Fundamentals of hydraulics as applied to water and wastewater management. Includes basic hydraulic concepts, pressure, force, Bernoulli's principle, fundamentals of closed and open channel flow, major and minor head losses, overview of flow measurement and pump types, calculations and pump characteristic curves.

**ENV 104 Humanity and the Environment Discovery Laboratory /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): Concurrent enrollment in ANT/ENV 105

Laboratory exercises 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. This laboratory course satisfies the fourth credit hour of the Biological and Physical Science general education transfer credit if taken along with ENV 105. (Same as ANT 104.)

**ENV 105 Humanity and the Environment /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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. (Same as ANT 105.)

**ENV 106 Chemistry of Water/Wastewater Treatment /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): ENV 100.

Co-requisite(s): Concurrent enrollment in MAT 092.

Basic concepts of inorganic and organic chemistry as applied to water and wastewater treatment. Includes classification and structure of matter, fundamental chemical principles and relationships, fundamental chemical analyses, identification of chemical reactions and their application to the treatment of water and wastewater. Also includes basic laboratory principles and safety.

**ENV 130 Introduction to Water and Wastewater Treatment /4 cr. hrs./5 periods (4 lec., 1 lab)**

Prerequisite(s): ENV 100, 102, 106.

Overview of water and wastewater treatment processes and the importance of treatment to public environmental health. Includes summary of drinking water and wastewater sources, water quality, wastewater characteristics, and drinking water and wastewater regulations. Also includes conventional water treatment involved in ground and surface waters as well as conventional wastewater treatment involved in sewage treatment and general solid waste management presented along with the principles of basic operational laboratory analyses and basic treatment process calculations.

**ENV 132 Water and Wastewater Conveyance Systems /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ENV 100, 102, and MAT 092 or concurrent enrollment.

Operation and maintenance of water distribution and wastewater collection systems. Includes system management, components and design, principles of construction, flow characteristics, inspection, testing and maintenance, pump and lift stations, reservoirs, appurtenances, applications of mathematics, and safety programs.

**ENV 150 Introduction to Hazardous Materials and EPA Compliance /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENV 100 or concurrent enrollment, MAT 092 or concurrent enrollment.

Basic concepts of hazardous materials management. Includes historical perspectives, past incidents, relationships to the environment, federal, state and local regulations, terminology, toxicology, personal protective equipment, waste minimization, underground storage tanks and site and facility safety.

**ENV 153 Chemistry of Hazardous Materials /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): ENV 100 or concurrent enrollment.

Chemical principles as applied to hazardous materials handling. Includes basic chemical principles, nomenclature, equations, reactivity and hazards (radioactivity, organics, corrosives, combustibles, oxidizers, flammables, cryogenic materials and explosives).



**ENV 155 Site Investigation I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENV 150, or concurrent enrollment.

Hazardous materials site investigation and clean up. Includes planning and organization, training and medical programs, site characterization, sampling and monitoring, site control, container handling and emergency response.

**ENV 156 Hazard Communication and Department of Transportation Hazardous Materials /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ENV 100 recommended.

Overview of regulations for transporting hazardous materials and substances and principals of designing and writing hazard communication programs for industry. Includes Title 49 Code of Federal Regulations, definitions, requirements for transportation and classes of hazardous materials, hazard determination, Material Safety Data Sheet (MSDS) file preparation, development of training programs for employees and writing of a hazard communication program.

**ENV 158 Explosives Handling /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Consent of instructor.

Movement and storage of explosive components. Includes regulations, definitions, protective equipment, tools, handling and movement, safety and responsibility.

**ENV 172 Water and Wastewater Operator Proficiency /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): ENV 102, 106, 130, and ENV 132, or taken concurrently.

Overview of up-to-date information and regulations pertaining to the field of water and wastewater systems. This course must be taken at the end of the Advanced Water and Wastewater Systems Technology Certificate for Direct Employment.

**ENV 175 Pollution Management Proficiency /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): ENV 150, 153, 155, and ENV 156 or taken concurrently.

Overview of up-to-date information and regulations pertaining to the field of solid and waste management. This course must be taken at the end of the Advanced Hazardous Materials Certificate for Direct Employment.

**ENV 196 Independent Study in Environmental Technology /1-3 cr. hrs./1-6 periods (1-3 lec., 0-3 lab)**

Prerequisite(s): Consent of instructor.

Independent study in Environmental Technology. Content to be determined by conference between student and instructor.

**ENV 200 OSHA 30: Industrial/Workplace Safety /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENV 100 recommended.

Foundations, principles, regulations, and technologies of industrial safety. Includes job safety analysis, personal protective equipment, noise exposure,

mechanical and electrical safety, trenching and shoring, respiratory protection, confined space, personal safety, back safety, heat stress, lab safety and traffic safety.

**ENV 202 Environmental Sampling and Monitoring /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): ENV 100.

Principles of qualitative and quantitative sampling and monitoring. Includes water, wastewater, air and solid materials (soils, geology, solids and hazardous waste). Also includes flow measuring devices, sampling equipment, use of tables, calculations, chain of custody, and sample handling.

**ENV 205 Environmental Law for Non-Lawyers /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENV 100 or 105.

Examination of regulatory statutes which impact the field of environmental technology. Includes the evolution of key environmental legislation, the regulatory statutes and key precedencies that form the foundation of environmental law. The legislation includes NEPA, RCRA, CERCLA, TSCA, FIFRA, Clean Air Act, Clean Water Act.

**ENV 206 Air Monitoring and Sampling /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): ENV 100.

Principles of sampling, monitoring, and testing air samples. Includes identification of air contaminants, methods of monitoring and sampling each type of contaminant, instruments used in monitoring and sampling, and means of calculating exposure levels. Also includes an introduction to government regulations concerning air quality and industrial air pollution control devices.

**ENV 208 Environmental Laboratory Analysis /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENV 100, CHM 130 (CHM 151 for AA Transfer Degree).

Principles of environmental analysis and laboratory training. Includes chemical and biological analyses techniques, sample preparation, equipment use and maintenance, record keeping and report preparation, and laboratory management. Also includes wet chemistry techniques commonly employed in the environmental laboratory, including electrometric, gravimetric and photometric analyses for water, wastewater and air and soil sample.

**ENV 220 Advanced Wastewater Treatment /3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ENV 130.

Exploration of the principles of biological and physical/chemical methodologies to treat municipal and industrial wastewater. Includes uses of chemicals for neutralization, coagulation, and precipitation; activated sludge systems, biological and trickling filters, and land treatment for removal of solids from wastewaters. Also includes an emphasis on utilizing laboratory, visual, and mathematical techniques for process control and troubleshooting.

**ENV 240 Advanced Water Treatment /3 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): ENV 130.

Processes of ground and surface water treatment. Includes softening, manganese and iron removal, trihalomethane control, alternative disinfection, carbon treatment, air stripping, ion exchange, water quality considerations and process control utilizing laboratory techniques and results.

**ENV 242 Cross-Connection Control /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): BCT 150, or ENV 102, 132.

Protection of potable water systems back flow. Includes theory of cross-connection control, regulations, plumbing codes, inspector and tester responsibilities, and repair and testing of backflow assemblies. Emphasis is placed on assembly testing, troubleshooting and repair. Helps prepare students for the State Certification Exam. (Same as BCT 242.)

**ENV 244 Electrical and Mechanical Maintenance /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Water and wastewater equipment maintenance. Includes maintenance program development and recordkeeping, electricity and electrical equipment maintenance, mechanical maintenance as applied to prime movers, pumps, pumping stations, couplings, compressors, valves, chemical feeders and flow meters.

**ENV 250 Toxicology and Industrial Hygiene /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ENV 200 or ENV 251 recommended.

Introduction to the basics of toxicology, toxic substances, how exposure can occur, what levels of exposure are harmful, and how to control workplace toxic hazards. Includes governmental regulations and standards for toxic substances. Also includes safe industrial practices for handling toxic chemicals and general industrial hygiene.

**ENV 251 OSHA 40: Hazardous Materials - Health and Safety /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): ENV 100 recommended.

Protection of personnel in contact with hazardous materials. Includes basic toxicology, personal protection and safety, hazard identification systems, recognition and identification of hazardous materials, hazard classes and their properties, site emergencies, spill control and clean up. Meets OSHA requirements for business, industry, and government hazardous materials handlers.

**ENV 258 Advanced Laboratory Analysis /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): ENV 208.

Principles of advanced environmental analysis. Includes EPA methodology, quality assurance/quality control, record keeping, instrument operation and maintenance, and sample preparation. Also includes hands-on experience with methods and instrumentation commonly employed in environmental and other chemical laboratories.

**ENV 296 Advanced Independent Study in Environmental Technology /1-3 cr. hrs./1-6 periods (1-3 lec., 0-3 lab)**

Prerequisite(s): Consent of instructor.

Independent study in Environmental Technology. Content to be determined by conference between student and instructor.

**ENV 298 Advanced Topics in Env: /5-5 hrs./5-5 periods (.5-5 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics designed to respond to advances in the field of environmental technology. Includes relationships between environmental technology and other related disciplines. Also includes specific student interests, needs, and faculty expertise. Credit may be earned for each topic taken.

**ENV 299 Co-op Related Class in ENV /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Consent of instructor.

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. May be taken two times for a maximum of two credit hours.

**ENV 299 Co-op Work in ENV /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): Consent of instructor.

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. May be taken two times for a maximum of sixteen credit hours.

## EQUINE SCIENCE

**EQS 101 Equine Anatomy and Physiology /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Basic instruction in the structure and function of the horse. Includes an introduction to the scientific method as it relates to the horse, anatomy and physiology of the equine species, and basics of conformation analysis. Prepares student for further science and equitation studies in equine science.

**EQS 102 Equine Judging /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Introduction to the proper selection and judging of horse conformation and performance. Includes concepts of anatomy, condition, and way of going. Standards of equine judging will be emphasized. May be taken four times for a maximum of twelve credit hours.



**EQS 120 Beginning Horsemanship /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Introduction to horsemanship. Includes horse handling, tack and equipment, introduction to riding and training, and training techniques.

**EQS 200 Equine Animal Science I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic instruction in equine animal science. Includes equine conformation disorders, basic equine nutrition and disorders of nutrition, parasitology, infectious diseases, and injury induced lameness.

**EQS 201 Equine Animal Science II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Advanced topics in equine animal science. Includes the anatomy and physiology of the equine nervous, endocrine and reproductive system, reproductive physiology of the mare and the stallion, breeding management practices, foaling and the neonatal period, foal management, advanced techniques in equine reproduction, business management for the mare owner and the stallion service manager.

**EQS 203 Horse Care and Management /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): None.

The care and management of the horse as a domestic companion animal. Includes basic veterinary requirements, feeds and feeding, stabling, and preventive health care.

**EXPERIENTIAL EDUCATION****EED 110 Prior Learning Assessment /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Explore credit options through the development of an individuals 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. May be taken two times for a maximum of four credit hours. This course applies to students in the public safety (Fire Science, Law Enforcement, and Corrections) programs only.

**EXPLORATORY****EXP 100 Survey of Legal Related Careers /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to legal related careers. Includes legal assistant (paralegal), administrative support, court support services, and administration of justice.

**FASHION DESIGN AND CLOTHING****FDC 111 Clothing Construction (Beginning) I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Fundamental principles of clothing construction. Includes selection of fabric, style and all techniques required for construction of clothing for men, women and children using commercial patterns. Proficiency test may be taken for level placement.

**FDC 112 Alteration and Designing /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Methods of altering commercial patterns and principles of fitting garments. Includes production of personal patterns for basic dress, shirt and pants.

**FDC 121 Applied Dress Design /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Flat pattern method of pattern making with emphasis on engineering.

**FDC 122 History of Fashion /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History of clothing and personal decoration as a reflection of society and culture. Includes social, aesthetic, economic and philosophical expressions from 3000 B.C. to the 20th century. Also includes individual and group expression through the following as related to historical events and trends: fabric and decoration, silhouettes, garments, accessories, hairstyles and cosmetics.

**FDC 126 Textiles /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Technology of textile fibers, yarns, fabric construction and special finishes. Includes design projects applicable to interior design, fashion design and merchandising. Also includes selection, economics and care of fabrics.

**FDC 131 Clothing Selection /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Consumer analysis of clothing design, construction and cost based on social, aesthetic and individual needs. Includes selection of color and line. Designed for personal use or for those in the fields of fashion design, clothing consultation or merchandising.

**FDC 132 Psychology of Dress /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Human behavior in relationship to clothing and body image. Includes satisfaction of basic human needs, effect on individuals and groups, reflection of self-perception, evaluation of clothing trends and changing society and culture. Students pursue a research project.

**FDC 141 Fashion Design I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Theory and practice of fashion design. Includes profile of the designer at work, basic fashion design sketching and the application of fine art principles to fashion design.

**FDC 142 Alteration and Repair /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Techniques for lengthening the life and increasing the usefulness of garments. Includes methods of altering, fitting, repairing, restyling, reconditioning and restoring clothes.

**FDC 198 Special Topics in Fashion Design:/1-4 cr. hrs./1-8 periods (1-4 lec., 1-4 lab)**

Prerequisite(s): Consent of instructor.

Special topics in fashion design which reflect current developments, historical trends, and new technologies. Credit may be earned for each topic taken.

**FDC 211 Clothing Construction (Advanced) II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): FDC 111 or satisfactory score on proficiency test.

Advanced clothing construction techniques. Includes selection of fabrics and patterns. Commercial patterns are used.

**FDC 212 Clothing Construction (Tailoring) III /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): FDC 211 or consent of instructor.

Custom and semi-commercial tailoring techniques. Includes experiments with recent developments in construction methods. Emphasis on use of natural fibers.

**FDC 241 Fashion Design II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): FDC 111, 141 or consent of instructor.

Application of fashion design principles. Students design and construct original garments by draping fabric on the dress form.

**FINANCE**

**FIN 102 Principles of Bank Operations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Fundamentals of bank functions providing a comprehensive introduction to the diversified services offered by the banking industry. Includes bank accounting, pricing and profitability and personnel and security functions. Designed to help the beginning banker view his profession in a broad perspective.

**FIN 111 Personal Investment Portfolios /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of various investment vehicles and portfolios. Includes strategies for achieving investment goals in view of risk and return relationships. Also includes common stocks, bonds, investment companies, types of speculative investments and a review of various portfolios with different investment objectives.

**FIN 121 Introduction to Personal Financial Planning /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The financial planning process. Includes regulations affecting financial planners, developing personal financial statements and analyzing the client's financial position. Also includes understanding the economic cycles and concepts of time value of money. Helps the student prepare for the first IBCFP certification examination.

**FIN 123 Personal Investment Strategies /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Investment techniques and analysis. Includes markets, taxation, risk analysis, and appropriate use. Also includes the interpretation of prospectus and corporate financial statements.

**FIN 124 Tax Management and Planning /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Individual income, business, and tax sheltered investment techniques. Includes individual income and business taxation, case analysis, tax advantage investments, and planning.

**FIN 131 Principles of Credit Unions /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Information and training to prepare persons as credit union executives. Includes credit union operations, preparing and conducting annual meetings and presenting the credit union concept at a public meeting.

**FIN 136 Investments and Family Financial Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of investment and family financial management concepts and practices. Includes yields, limited income securities, growth factors analysis

of financial statements, family budgeting, property insurance, mutual funds, variable annuities and aspects of other investment media.

**FIN 139 Credit Union Accounting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Accounting systems used by credit unions for internal control, record keeping and report generation. Includes terms and procedures unique to credit unions.

**FIN 199 Co-op Related Class in FIN /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**FIN 199 Co-op Work in FIN /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**FIN 205 Real Estate Finance /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of real estate finance from the viewpoint of the home mortgage loan officer. Includes the mortgage market, acquisition of a mortgage portfolio, mortgage plans and procedures, mortgage loan processing and servicing and duties of the mortgage loan officer. (Same as RLS 205.)

**FIN 208 Installment Credit /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Techniques of installment lending. Includes credit, obtaining and checking information, servicing the loan, collecting amounts due, inventory financing, special loan programs, business development, advertising and the public relations aspect of installment lending.

**FIN 217 Analyzing Financial Statements /2-3 cr. hrs./2-3 periods (2-3 lec.)**

Prerequisite(s): None.

Characteristics of financial statements and their analysis. Includes review of basic accounting principles for those who have studied accounting. For those who have not, minimum accounting background needed for financial statement analysis is provided.

**FIN 231 Credit Union Operations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of credit union organization, department functions, and compliance to consumer regulations. Includes managing credit union operations, teller operations, credit granting, financial counseling, collections, credit unions and the law, advertising, and related operations.

**FIN 239 Credit Union Financial Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FIN 139 or ACC 101.

Principles of credit union financial management. Includes financial statement analysis, budgeting, liquidity management, financial planning, risk management, insurance, and investment procedures.

## FIRE SCIENCE

**FSC 130 Strength and Fitness for the Fire Service /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

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.

**FSC 149 Fire Operations I /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Specialized classroom and practical experience in the techniques of fire fighting. Includes the chemistry of fire, use of water and other agents, fire fighting equipment and its uses, fire fighting practices and safety.

**FSC 150 Fire Operations II /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): FSC 149.

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. Completion of FSC 149 and 150 will help prepare the student for successful completion of State of Arizona Firefighter I practical evaluations.

**FSC 151 Introduction to Fire Science /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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.

**FSC 152 Fundamentals of Fire Prevention /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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.

**FSC 153 Hazardous Materials I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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. Equivalent to State of Arizona's First Responder, 40-hour course.

**FSC 154 Advanced Fire Prevention /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FSC 152.

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. Completion of this course will allow the student to test for Arizona State Certification as Inspector II.

**FSC 160 Wildland Firefighting /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Basic wildland firefighting. Includes locating and reporting the fire, incident operations and management, suppression equipment, fire behavior, size-up, methods of suppression, and safety.

**FSC 161 Hazardous Materials II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FSC 153.

Principles and techniques of dealing with flammable, explosive, reactive and toxic materials. Includes identification, classification, researching of such materials and handling them under both hazardous and safe conditions. Also includes information on the special problems they cause and where they are likely to be found, shipped and used.

**FSC 162 Hydraulics and Fire Suppression /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 092. (PHY 101 recommended.)

Principles of hydraulics as applied to fire suppression. Includes physical laws affecting the movement of water through pipes, hydrants, pumps, hoses, etc.; functions and limitations of mechanical equipment; friction loss; head and pressure; water system; fire flow requirements; organization for fire suppression.

**FSC 163 Fire Apparatus and Equipment /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FSC 149.

Automotive apparatus (pumps, 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.

**FSC 164 Fire Protection Systems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FSC 162.

Principles of fire protection systems. Includes portable and fixed fire extinguishing equipment, automatic sprinkler and deluge systems, rate of temperature rise and smoke detecting devices and alarm systems.

**FSC 165 Building Construction for Fire Protection /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of building design as related to fire protection. Includes fire travel, relation of fire load to propagation of flame, non-conforming structures and application of building codes.

**FSC 166 Fire Suppression, Strategy and Tactics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FSC 149.

Principles of planning fire suppression attacks. Includes planning an attack to fit the problem and revising the plan of attack to meet changing situations.

**FSC 167 Rescue Practices and First Aid /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Application of rescue practices and first aid techniques to emergency situations.

**FSC 175 Introduction to Fire Investigation: Origin and Recognition of Arson /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles of arson investigation. Includes an introduction to fire investigation, laws, fire causes, determining point of origin, evidence, fire setters, case investigation and preparation, and courtroom demeanor and testimony.

**FSC 185 Advanced Fire Investigation: Arson /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

An advanced course designed for training in fire investigation for those private sector agencies, fire science and governmental agencies at state and local level, with or without police powers, who have direct responsibility for fire investigations.

**FSC 189 Current Issues in Fire Science /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Selected topics in fire science which reflect current issues, trends, and technologies.

**FSC 198 Special Topics in Fire Science: /5-3 cr. hrs./1-4 periods (5-3 lec., 0-3.5 lab)**

Prerequisite(s): Consent of instructor.

Selected topics reflecting current issues in fire science.

**FSC 270 Leadership I for Fire Service Executives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Concepts, techniques, and applications 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.

**FSC 271 Leadership II for Fire Service Executives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Continuation of FSC 270. Includes organizational structure, roles and responsibilities, and organizational values. Also includes organizational vision, fiscal management and priorities, innovative organizations, executive leadership, and deployment of self.

**FSC 272 Leadership III for Fire Service Executives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

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/unethical persuasion, and the media.

**FSC 273 Leadership IV for Fire Service Executives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Continuation of FSC 272. Includes the local fire department in relation to its city government, local policy development, and understanding how the local educational system works. Also includes legal aspects of the city and department procedures, networking and community relations, relations with local and state fire service providers, and understanding the national and international fire service providers.

**FSC 274 Leadership V for Fire Service Executives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

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.

**FSC 275 Leadership VI for Fire Service Executives /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Continuation of FSC 274. Includes master planning, facilities planning, and human resource planning. Also includes financial planning, strategic planning, implementation planning, and leadership skills in planning for the future.

**FSC 280 Fire Chief Training /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Preparation for professional fire personnel to become chief officers. Includes incident command, communications, and disaster management.

**FITNESS AND RECREATION****FAR 050 Senior Fitness and Conditioning /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Consent of instructor.

Conditioning for seniors who are age 55 or older and would like to begin fitness training to improve their lifestyle. Includes basic nutritional information, flexibility and strength training, and cardio endurance.

**FAR 105 Beginning Aerobics /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Aerobics for the beginning student. Includes a variety of exercises and dance routines to strengthen the cardiovascular system and tone muscles. Also, includes warm-ups and stretches for loosening muscles and joints and cool-down routines that stress relaxing and tapering off from the rigorous exercise program. This course is not intended for Fitness and Sports Science majors.

**FAR 120 Self Defense for Women /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the mental attitudes and physical skills needed to defend oneself against an attack. Includes recognizing potentially dangerous situations and how to avoid them. May be taken four times for a maximum of eight credit hours.

**FAR 130 Beginning Tae Kwon Do /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the basics of Tae Kwon Do. Includes stretching techniques, warm up exercises, self-defense techniques, and kicking techniques. Also includes skills sufficient to pass the yellow belt test. May be taken four times for a maximum of four credit hours.

**FAR 131 Intermediate Tae Kwon Do /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): FAR 130 or consent of instructor.

Continuation of FAR 130. Includes combinations of punches, strikes, and kicks. Also includes skills necessary to pass the green belt test. May be taken four times for a maximum of four credit hours.

**FAR 132 Advanced Tae Kwon Do /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): FAR 131 or consent of instructor.

Continuation of FAR 131. Includes advanced techniques and tournament type skill performance. May be taken four times for a maximum of four credit hours.

**FAR 133 Beginning Karate /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to Okinawan Karate. Includes history and philosophy, basic techniques, performance categories, and self-defense strategies. May be taken four times for a maximum of four credit hours.



**FAR 134 Intermediate Karate /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): FAR 133.

Continuation of FAR 133. Includes intermediate level katas (combinations of movements). May be taken four times for a maximum of four credit hours.

**FAR 161 Beginning T'ai-chi Chuan /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

Basic techniques of Yang style T'ai-Chaun, a form of martial arts. Includes an introduction to and principles of T'ai-chi; T'ai-chi for a healthier life style and self defense; and Yang Style Short Form. This course is not intended for Fitness and Sports Science majors.

**FITNESS AND SPORT SCIENCES**

**FSS 105 Beginning In-Line Skating /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Basics of in-line skating. Includes protective equipment, rules of the road, safety on skates, stretching and cool down, getting comfortable on in-line skates, moving on in-line skates, beginning movements or stride one, beginning braking, beginning turning, edge control, stride two, and practical skating.

**FSS 106 Intermediate In-Line Skating /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): FSS 105 or consent of instructor.

In-line skating for the experienced skater. Includes review or equipment needs and safety rules, fitness preparation, and intermediate level movements related to downhill and uphill skating.

**FSS 110 Beginning Golf /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to golf for the beginner. Includes grip, stance, swing, putting, and rules. May be taken four times for a maximum of four credit hours.

**FSS 111 Intermediate Golf /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Development of skills introduced in the beginning class. Includes grip, stance, swing, driving, chipping, rules, and etiquette. May be taken four times for a maximum of four credit hours.

**FSS 112 Advanced Golf /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Advanced skills in golf and development of the mental aspects of the game. Includes techniques for playing hazards, difficult lies, and making special shots. May be taken four times for a maximum of four credit hours.

**FSS 113 Beginning Racquetball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to racquetball for the beginner and novice. Includes equipment, safety, game rules, techniques, and skill development. Also includes singles, cut-throat, and doubles play. May be taken four times for a maximum of four credit hours.

**FSS 114 Intermediate Racquetball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Intermediate level skill development and play. Includes a review of the beginning level skills. Also includes rules, etiquette, singles and doubles strategies, and tournament play. May be taken four times for a maximum of four credit hours.

**FSS 116 Beginning Tennis /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the basic skills and rules of tennis. Includes forehand, backhand, serve, and volley. Also includes strategy, courtesy, selection of equipment, and general rules for playing singles and doubles. May be taken four times for a maximum of four credit hours.

**FSS 117 Intermediate Tennis /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Refinement of tennis skills for the developing player. Includes running forehand drive, running backhand drive, service, volley, drop shot, overheads, strategies, and analysis of opponent's game. Also includes scoring, handling physical and mental stress, avoiding injury, and tournament play. May be taken four times for a maximum of four credit hours.

**FSS 118 Advanced Tennis /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Progressive skill development for the advanced tennis player. Includes advanced strategies in singles and doubles play, poise in tournaments, analyzing your opponent, handling injury, and interpretation of rules. May be taken four times for a maximum of four credit hours.

**FSS 119 Track and Field /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Fundamental techniques of track and field. Includes development of personal skills, rules, courtesies, safety, philosophy, and training. May be taken four times for a maximum of four credit hours.

**FSS 120 Beginning Soccer /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to soccer for the beginner. Includes history of soccer, basic skills, strategies, terminology, and rules to be used in drill and game activities. May be taken four times for a maximum of four credit hours.



**FSS 121 Advanced Soccer /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Advanced skills for soccer. Includes game-like conditions, special plays and advanced game strategies. May be taken four times for a maximum of four credit hours.

**FSS 125 Beginning Basketball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the fundamentals of basketball. Includes development of offensive and defensive skills, rules, team play, and strategy. May be taken four times for a maximum of four credit hours.

**FSS 126 Intermediate Basketball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Development of techniques for students with basic basketball skills. Includes footwork, jumping, rebounding, guarding, designed plays, and officiating techniques. May be taken four times for a maximum of four credit hours.

**FSS 127 Advanced Basketball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Advanced skills for basketball. Includes game-like conditions, special plays, and advanced game strategies. May be taken four times for a maximum of four credit hours.

**FSS 128 Beginning Baseball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to the fundamentals and basic skills of baseball. Includes infield, outfield, catching, pitching, offensive and defensive strategies. May be taken four times for a maximum of four credit hours.

**FSS 129 Beginning Softball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to slow and fast pitch softball. Includes defensive and offensive skills, strategies, pitching strategies, officiating, and rules. May be taken four times for a maximum of four credit hours.

**FSS 131 Beginning Volleyball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to volleyball for the beginning player. Includes basic skills, rules, and team systems and strategies. May be taken four times for a maximum of four credit hours.

**FSS 132 Intermediate Volleyball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to volleyball for the player with previous volleyball experience. Includes refinement of basic skills, introduction of advanced skills, and team systems. May be taken four times for a maximum of four credit hours.

**FSS 133 Advanced Volleyball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Volleyball for the skilled and experienced player. Includes refining skills and introducing advanced techniques and team systems. May be taken four times for a maximum of four credit hours.

**FSS 134 Advanced Baseball /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): FSS 128.

Introduction to advanced tactics and competition in baseball. Includes advanced instruction in baserunning, fielding, hitting, and offensive and defensive strategies. May be taken four times for a maximum of four credit hours.

**FSS 148 Spinning /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Consent of instructor.

Individually paced physical stationary bike riding. Includes fundamental techniques of spinning and mental conditioning to maximize benefits from non-impact cardiovascular workouts set to music.

**FSS 150 Fitness Activities /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to fitness activities for the beginner. Includes the importance of exercise, proper nutrition, effect of attitudes on health, and the basics of the physiology of exercise. Also includes participation in stretching exercises, walking, jogging, dancing, and biking. May be taken four times for a maximum of four credit hours.

**FSS 151 Sports Conditioning /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Concurrent enrollment in an athletic team class.

Conditioning class for athletes. Athletes work with their respective coaches with exercises and drills designed for their particular sport. May be taken four times for a maximum of four credit hours.

**FSS 152 Independent Activity /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): At least one physical education activity class or consent of instructor.

Independent fitness activities designed for students who are actively engaged in a fitness activity, but are unable to meet regularly scheduled physical education classes. May be taken four times for a maximum of four credit hours.

**FSS 153 Plus-sized Exercise /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Twenty-five pounds or more overweight.

Beginning aerobic exercise, toning, and stretching for individuals desiring to use exercise for weight control. Includes student determination of appropriate exercise intensity levels and modifications during activities. May be taken four times for a maximum of four credit hours.

**FSS 155 Athletic-Academic Success /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None

Survey of successful educational strategies in support of individual academic plans, career goals and personal decision making. Includes attitude adjustments, learning styles, study skills, test preparation, time management and long range academic planning. Also includes concerns for lifetime health and fitness, NJCAA eligibility, and transfer to four-year colleges. May be taken three times for a maximum of six credit hours.

**FSS 174 Yoga /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to stress reduction through Yoga. Involves stretching, basic postures, breathing, and relaxation techniques to improve overall wellness. May be taken four times for a maximum of four credit hours.

**FSS 176 Low Impact Aerobics /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Introduction to cardiovascular and muscular exercises. Includes walking, jogging, stretching, calisthenics, and muscle toning. Also includes cool down and relaxation exercises. May be taken four times for a maximum of four credit hours.

**FSS 177 Medium Intensity Aerobics /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Moderate cardiovascular and muscular conditioning. Includes increasing stamina and exercise levels, and the development of individual workout routines. May be taken four times for a maximum of four credit hours.

**FSS 178 High Intensity Aerobics /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Intensive aerobics designed for muscular and cardiovascular efficiency. Includes the development of a complete exercise program. May be taken four times for a maximum of four credit hours.

**FSS 179 Step Aerobics /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

High intensity, low impact program that involves stepping on and off a platform repeatedly, while simultaneously performing upper body movements. Includes both beginning and advanced students at varying intensity levels.

**FSS 180 Strategies for Weight Management /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Current research, information, and support to make lifestyle changes to manage weight and improve overall wellness. Includes an introduction to new concepts in weight control, physiological and psychological effects of dieting, collection of baseline data (anthropometric measures, health and exercise histories), behavior modification and motivational techniques, nutritional information, and exercise and activity concepts. May be taken four times for a maximum of four credit hours.

**FSS 185 Beginning Weight Training and Cardiovascular Fitness / 1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Basic, balanced fitness training program designed for the beginner. Includes the development of a personalized weight training and cardiovascular routine designed for growth in muscle endurance, strength, and cardiovascular fitness. May be taken two times for a maximum of two credit hours.

**FSS 186 Intermediate Weight Training and Cardiovascular Fitness / 2 cr. hrs./4 periods (4 lab)**

Prerequisite(s): None.

Exploration into the range and magnitude of weight and cardiovascular training. Includes rules for weight training, body position when exercising, order of exercises, overloading, and cardiovascular assessment. Also includes current trends and issues. May be taken six times for a maximum of twelve credit hours.

**FSS 187 Advanced Weight Training and Cardiovascular Fitness / 2 cr. hrs./4 periods (4 lab)**

Prerequisite(s): None.

Intensive weight training and cardiovascular activities for physically qualified individuals. Includes advanced training techniques and development of higher degree skill techniques. May be taken six times for a maximum of twelve credit hours.

**FSS 198 Special Topics in Fitness and Sport Sciences: /1-4 cr. hrs./ 1-8 periods/(1-4 lec., 1-4 lab)**

Prerequisite(s): Consent of instructor.

Selected topics in fitness and sport sciences which reflect current developments, trends and technologies. Credit may be earned for each topic taken.

**FSS 199 Co-op Related Class in FSS /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Concurrent enrollment in 199 Co-op Work.

See Cooperative Education section for description.

**FSS 199 Co-op Related Work in FSS /1-3 cr. hrs./5-15 periods (5-15 lab)**

Prerequisite(s): Concurrent enrollment in 199 Co-op Related Class.

See Cooperative Education section for description.

**FSS 201 Introduction to Exercise Science and Physical Education / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the disciplines and professions associated with exercise science and physical education. Includes an overview of historical and philosophical foundations.

**FSS 236 Motivational Techniques for Personal Trainers and Coaches / 2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Basic theories of motivation, reinforcement, and goal setting for personal trainers and coaches to apply to their clients or athletes. Includes individual and group dynamics, exercise adherence, and communication techniques. Focuses on practical applications.

**FSS 238 Introduction to Sports Injury Management /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Introduction to principles and techniques of preventing, treating and rehabilitating sports related injuries. Includes recognition of sports injuries, therapeutic methods, mechanisms of sports injuries, nutrition, and taping and wrapping techniques.

**FSS 239 Introduction to Leisure Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of job careers in the leisure service field. Includes sports and recreation specialty, health, teaching, and coaching in the commercial, private, and public sector.

**FSS 241 Nutrition and Body Composition /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

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.

**FSS 242 Games and Activities for the School-Aged Child /3 cr. hrs./3 periods (3 lec.)**

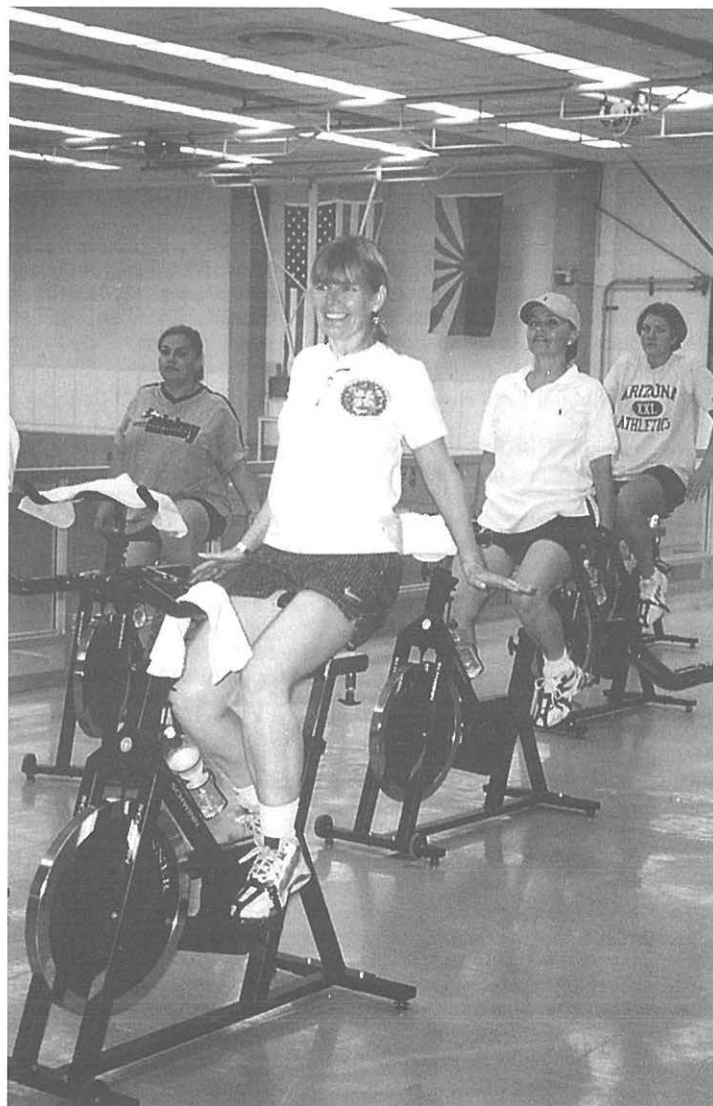
Prerequisite(s): None.

Basic skills in and knowledge of methods and materials for teaching physical activities, games, and sports to the school-aged (K-8) child. Includes program development and planning, classroom management techniques, legal considerations, activities, and modifications for the special child.

**FSS 250 Sport Safety Training and CPR /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None

Emergency first aid for respiratory failure and cardiac arrest. Includes one-rescuer techniques for conscious and unconscious adults and children, which provides one-year American Red Cross certification for each, and standard first aid for the immediate care, especially in sports situations, for victims of injury or sudden illness, which provides three-year ARC certification. Also includes further care if medical help is delayed or unavailable, urgent care in life threatening situations, and information on HIV/AIDS and prevention of disease transmission. May be taken four times for a maximum of four credit hours.



**FSS 250A Sport Safety: CPR /5 cr. hr./5 period (.5 lec)**

Prerequisite(s): None.

Emergency first aid for respiratory failure and cardiac arrest. Includes one-rescuer techniques for conscious and unconscious adults and children, which provides one-year American Red Cross certification for each. Also includes information on HIV/AIDS. May be taken four times for a maximum of two credit hours.

**FSS 250B Sport Safety Training /5 cr. hr./5 period (.5 lec.)**

Prerequisite(s): None.

Standard first aid for the immediate care, especially in sports situations, for victims of injury or sudden illness. Includes provision of three-year American Red Cross certification. Also includes further care if medical help is delayed or unavailable, urgent care in life threatening situations, and information on prevention of disease transmission. May be taken four times for a maximum of two credit hours.

**FSS 270 Principles of Strength and Conditioning /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): FSS 218.

Advanced theory and application of resistance training principles. Includes designing, implementing and evaluating training and conditioning programs to improve fitness and athletic performance. May be taken three times for a maximum three credit hours.

**FSS 276 Individualized Exercise for Wellness /2 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Evaluation and interpretation of basic wellness concepts. Includes exercise, nutrition, weight control, and the application of each to create a total fitness profile.

**FSS 277 Personal Trainer /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BIO 156, FSS 276, or consent of instructor.

Principles and methods of training. Includes screening and evaluation, individual program design, injury prevention, first aid, and legal issues. Also includes an overview of anatomy, exercise physiology, biomechanics, weight training, and cardio-respiratory fitness.

**FSS 278 Personal Trainer Practicum /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): FSS 276 and 277 or concurrent enrollment.

Intended for students preparing to be personal trainers. Includes hands-on experience working with student-clients enrolled in other FSS courses by helping develop appropriate exercise goals, providing motivation, giving supplemental nutritional information, and demonstrating exercise techniques.

**FSS 279 Motor Development /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Examination of developmental changes in motor patterns for children and adults. Includes methods used in evaluating motor skill performance and the selection of appropriate movement experiences.

**FSS 280 Lifestyle and Weight Management Consultant /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): FSS 241 or 277 or concurrent enrollment, or consent of instructor.

Designed for the fitness professional. Includes current and complete survey of the knowledge, instructional techniques, and professional responsibilities that lifestyle and weight management consultants need to safely and effectively help clients make appropriate lifestyle changes. Also includes communication, basic health behavior psychology, body composition assessment, physiology of obesity, applied exercise science, basic nutrition, program planning and implementation, legal, professional, and ethical responsibilities.

**FSS 285 Principles of Athletic Coaching /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Surveys the fundamentals of coaching. Includes integrating knowledge from experienced coaches with the latest research by sport scientists.

**FSS 286 Sports Officiating /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Familiarization with and application of the rules of various sports from the standpoint of an official. Includes current methods and materials to develop competency in executing official rules. Also includes actual experience through service in the college's intramural program and other agencies.

**FSS 287 Tennis Officiating and Group Tennis Instruction/2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Teaching and officiating tennis. Includes basic instructional skills and officiating techniques.

**FSS 288 History and Philosophy of Sport and Physical Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Historical development and philosophical foundations of contemporary sports and related activities. Includes ancient societies, the Middle Ages, European perspectives, and a chronicle of American athletic tradition and thought.

**FSS 296 Independent Studies in Fitness and Sport Sciences /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): Consent of instructor.

Students independently continue their development in health, physical education and recreation with the help of a faculty member. May be taken two times for a maximum of six credit hours.

**FSS 298 Advanced Topics in FSS: /25-16 cr. hrs./25-8 periods (.25-4 lec., 1-12 lab)**

Prerequisite(s): Consent of instructor.

Advanced topics in fitness and sport sciences offering a variety of information and experiences. Credit may be earned for each topic taken.

**FSS 299 Co-op Related Class in FSS /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Concurrent enrollment in 299 Co-op Work.

See Cooperative Education section for description.

**FSS 299 Co-op Related Work in FSS /1-3 cr. hrs./5-15 periods (5-15 lab)**

Prerequisite(s): Concurrent enrollment in 299 Co-op Related Class.

See Cooperative Education section for description.

**PROFESSIONAL ACTIVITIES COURSES FOR STUDENTS PLANNING A MAJOR OR MINOR IN FITNESS AND SPORT SCIENCES****FSS 208 Professional Activities: Aerobics /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Aerobic skills and teaching methods for the Fitness and Sport Sciences major. Includes proper posture, exercise considerations, importance of music, learning theory, and evaluation methods.

**FSS 213 Professional Activities: Basketball /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Basketball skills and teaching methods for the Fitness and Sport Sciences major. Includes offense, defense, special situations, and teaching techniques. Also includes participation in the sport.

**FSS 218 Professional Activities: Weight Training /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Introduction to basic resistance training principles. Includes anatomy and physiology, biomechanics, weight training principles, assessment and program development for healthy adults by Fitness and Sport Sciences majors.

**FSS 223 Professional Activities: Racquetball /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Racquetball skills and teaching methods for the Fitness and Sport Sciences major. Includes basic techniques and methods, offensive and defensive play, serve strategy, learning theory, and evaluation methods.

**FSS 224 Professional Activities: Self Defense /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Self defense for the Fitness and Sport Sciences major. Includes skill to recognize, avoid, and eliminate potentially dangerous situations, defending yourself, reporting attacks, and support agencies for victims of attack.

**FSS 225 Professional Activities: Soccer /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Soccer for the Fitness and Sport Sciences major. Includes methods of teaching skills, playing strategies, classroom management, disciplinary policies, and coaching philosophies.

**FSS 227 Professional Activities: Softball /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Softball skills and teaching methods for the Fitness and Sport Sciences major. Includes equipment used, offensive and defensive play, strategy, and rules of the game.

**FSS 230 Professional Activities: Tennis /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Principles of teaching and coaching the sport of tennis. Includes skill development, rules, strategies, and the singles and doubles game.

**FSS 231 Professional Activities: Track and Field /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Track and field skills and teaching methods for the Fitness and Sport Sciences major. Includes conditioning, field events, performance, and strategy.

**FSS 232 Professional Activities: Volleyball /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): WRT 100 or 106 or concurrent enrollment or satisfactory score on the writing assessment test.

Principles of teaching and coaching the sport of volleyball. Includes skill development, skill progressions, instructional methods, basic rules, and strategies.



## FOOD SCIENCE AND NUTRITION

### **FSN 055 Gourmet/International Cuisine /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

Study of international foods with lectures and food preparation by students. Includes history of foods studied. May be taken two times for a maximum of four credit hours.

### **FSN 056 Authentic Mexican Cookery /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Methods of utilizing home and commercial cooking facilities and resources to prepare authentic Mexican dishes. Includes selection and substitution of ingredients, cooking procedures and eye appeal. Also includes an appreciation of cultural aspects of Mexican people through the art of cooking.

### **FSN 057 Vegetarian Dietary Cookery /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

The study of food combinations from vegetable sources which supply adequate nutrition. Includes demonstrations in the planning and preparation of foods from plants which supply essential nutrients.

### **FSN 110 Cake Decorating and Candy Making /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

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 wedding cakes and holiday delectables.

### **FSN 113 Food Study /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

The composition of various types of food. Includes methods of preparing foods to be flavorful, attractive and nutritious. Emphasis on selection and utilization of proper nutrients for maintenance of health in persons of all ages.

### **FSN 124 Nutrition for the Young Child /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

In-depth study of the nutritional needs of children. Emphasis on the total basic nutrient requirements for optimal health and development.

### **FSN 127 Human Nutrition and Biology /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

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. Emphasizes laboratory experience that utilizes current technologies in the study of nutritional biochemistry and biochemistry-based nutritional assessment. (Same as BIO 127.)

### **FSN 154 Nutrition /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet. (Same as SSE 154.)

## FOUNDATIONS FOR PERSONAL CHANGE

### **FPC 101 Work and Learning in America /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of career and learning objectives. Includes learning and the world of work, careers in the 21st century, 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.

### **FPC 102 Reading for Information /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of reading skills appropriate to career objectives. Includes reading and the world of work, skills of workplace reading, and skill development in context. Also includes a focus on interpreting the printed work in a workplace context. May be taken four times for a maximum of four credit hours.

### **FPC 103 Applied Mathematics /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of mathematical skills appropriate to career objectives. Includes mathematics and the world of work, problem solving strategies, and skill development in context. Also includes a focus on basic calculations in a workplace context. May be taken four times for a maximum of four credit hours.

### **FPC 104 Writing at Work /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of writing skills appropriate to career objectives. Includes writing and the world of work, community through the written word, and skill development in context. Also includes a focus on practical writing in a workplace context. May be taken four times for a maximum of four credit hours.

### **FPC 105 Applied Technology /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of technology skills appropriate to career objectives. Includes technology and the world of work, understanding technological principles, and skill development in context. Also includes a focus on basic principles of technology in a workplace context. May be taken four times for a maximum of four credit hours.



**FPC 106 Observation at Work /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of observation skills appropriate to career objectives. Includes observation, problem solving, and the world of work, strategies for observing and interpreting, and skill development in context. Also includes a focus on observing processes and behaviors at work to solve problems and make decisions. May be taken four times for a maximum of four credit hours.

**FPC 107 Teamwork /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of teamwork proficiency appropriate to career objectives. Includes teamwork on the job, essentials for teamwork success, and skill development in context. Also includes a focus on task and relationship skills in a workplace context. May be taken four times for a maximum of four credit hours.

**FPC 108 Locating Information /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of skills in locating information from graphical displays appropriate to career objectives. Includes locating information in the world of work, data and types of data displays, and skill development in context. Also includes a focus on basic data formats in a workplace context. May be taken four times for a maximum of four credit hours.

**FPC 109 Listening /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of listening skills appropriate to career objectives. Includes listening and the world of work, hearing, listening, and interpreting, and skill development in context. Also includes a focus on literal comprehension, interpretation, and critical listening in a workplace context. May be taken four times for a maximum of four credit hours.

**FPC 110 Speaking English on the Job /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of spoken English skills appropriate to career objectives. Includes spoken English and the world of work, key issues in spoken English, and skill development in context. Also includes a focus on basic grammar, diction, and vocabulary in a workplace context. May be taken four times for a maximum of four credit hours.

**FRENCH****FRE 050 Conversational French /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Designed for persons with no previous knowledge of French. Primary focus on listening to and speaking elementary French.

**FRE 110 Elementary French I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the French language. Includes developing proficiency in listening, speaking, reading, and writing. Also includes French cultural traditions.

**FRE 111 Elementary French II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): FRE 110.

Continuation of FRE 110. Includes increased proficiency in listening, speaking, reading, and writing. Also includes French cultural traditions.

**FRE 210 Intermediate French I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): FRE 111 or two years of high school French.

Continuation of FRE 111. Includes an intensive review of grammar, in addition to reading selected authors and writing short compositions. Also includes extensive practice in speaking French. This course will be conducted primarily in French.

**FRE 211 Intermediate French II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): FRE 210.

Continuation of FRE 210. Includes an emphasis on efficient and contemporary language usage. This course will be conducted primarily in French.

**FRE 296 Independent Study in French /1-4 cr. hrs./1-4 periods (1-4 lab)**

Prerequisite(s): Consent of instructor.

Independent study in French literature, grammar, or special projects under the supervision of an instructor. May be taken two times for a maximum of eight credit hours.

**FRE 297 French Language Seminar: /.25-4 cr. hrs./ .25-4 periods (.25-4 lec.)**

Prerequisite(s): Consent of instructor.

French language related training. Includes presentations and development of skills in a given area, and topics of timely or limited interest.

**GENERAL BUSINESS****GEB 089 The Stock Market /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles of investing in the stock market. Includes stocks, bonds, speculative investments, mutual funds and commodities.

**GEB 110 Self Management for Personal Productivity /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques for enhancing personal productivity. Includes concepts of time and time management, goal setting, self management system, dealing with time wasters, conducting effective meetings, principles of daily planning, desk organization, and delegation.

**GEB 130 Making the Difference through Empowerment /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Techniques for personal empowerment. Includes understanding the role in personal and organizational success, keys to optimum performance, in action skills, giving and receiving feedback, and effective ways to take responsibility for success.

**GEB 131 Trust and Communication /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Cultivating an environment of trust in an organization and the impact of effective interaction skills in one-on-one communication. Includes recognizing and avoiding five "Trust Traps" behaviors that can make them appear untrustworthy to others and how to interact effectively with co-workers, managers, customers, and suppliers.

**GEB 132 Active Listening and Influencing Others /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Techniques and skills to become an active listener and active participant in a work or social setting. Includes strategies for gaining agreement and commitment, for building relationships, and to influence others.

**GEB 133 Writing for the Workplace /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Fundamentals of workplace communications. Including writing and correctly punctuating sentences, coherent paragraphs, and complete documents.

**GEB 134 Supporting Others and Valuing Differences /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Importance and value of supporting others and recognizing the value of basic human differences. Includes assessing personal skills, abilities, and motivations and to recognizing the synergistic effect possible with people with diverse skills, motivations, and values work together and listen to each other.

**GEB 135 Conflict and Partnerships /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Handling conflict and refining partnerships. Includes techniques for continuous improvement in dealing with conflict, formulating an on-the-job action plan, and satisfying needs of internal and external customers.

**GEB 136 Working with Self-Directed Teams /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Recognize the personal, interpersonal, and organizational advantages of teamwork and cooperation. Includes identifying and understanding the stages of team development and the six factors that make teams effective. Also includes making distinction between teamwork and teams and the advantages of self-directed teams for team members, the team, and the organization.

**GEB 137 Reaching Agreement /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Understanding the dynamics of reaching agreement. Includes techniques for making good decisions and reaching agreement to maintain high standards of quality and commitment. Also includes interaction guidelines, key principles, and group process behaviors to facilitate group agreement and consensus.

**GEB 142 Improving Human Relations /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques for improving interpersonal relationships in the work environment. Includes enhancing one's self-image and the self-image of co-workers, communications, Maslow's hierarchy of human needs, appreciation of others' differences, cultural and religious awareness and appreciation for individual differences.

**GEB 150 Management Update Techniques I /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques of reviewing and improving management and supervisory skills. For first line managers. Includes management coordination, effective decision making, the planning process, organization control, staffing, terminations and sources of authority.

**GEB 151 Management Update Techniques II /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques of reviewing and improving management and supervisory skills. For first line managers. Includes interviewing, communication, effective presentations, time management and career advancement.

**GEB 152 Management Update Techniques III /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques of reviewing and improving management and supervisory skills. For first line managers. Includes self-image, working with others, group processes, motivation, personality and leadership.

**GEB 153 Management Update Techniques IV /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques of reviewing and improving management and supervisory skills. For first line managers. Includes leadership techniques, management training, coping with change, executive ethics, dealing with complaints and criticism, motivation, selling yourself, the habit of success and the laws of success.

**GEOGRAPHY****GEO 101 Physical Geography: Weather and Climate /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Introduction to the physical elements. Includes weather, climate, vegetation, and soils. Also includes their importance to humans, their interrelationships, resulting patterns, and effects.

**GEO 102 Physical Geography: Land Forms and Oceans /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Introduction to the surface of the earth and the forces of nature that shape it. Includes the study of volcanoes, earthquakes, glaciers, rivers, oceans, and the interrelation of these forces with humans.

**GEO 103 Cultural Geography /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of the human world from a geographic perspective. Includes an exploration of global issues such as population, food supply, geopolitics, and urbanization. Also includes industrialization as seen in the special combination of cultural, physical, historical, economic, and organizational qualities imprinted on the landscapes of the world.

**GEO 104 World Regional Geography /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Geographic concepts and information organized by conventional regions and nations. Includes human social and natural environments in both historical and contemporary contexts. Also includes political, economic, population, and physical geographic topics appropriate for elementary and secondary education.

**GEO 108 Geography of Current Events /1-2 cr. hrs./2-3 periods (1-2 lec., 0-1 lab)**

Prerequisite(s): None.

Analysis of physical, cultural and regional geography through examination of global current events. Includes assessment of the region or country effected and its people, economy, politics, history, religion and language. Also includes consideration of global geophysical and climate patterns.

**GEO 230 Map and Air Photo Interpretation /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Fundamentals of map reading and air photo and image analysis. Includes introduction to standard cartographic methods and common products such as USGS topographic maps, orthophoto quads, high altitude infrared mapping photography and satellite imagery. Also includes applications in physical and social sciences, natural resources, engineering, agriculture, mining, commerce and industrial location.

**GEOLOGY****GLG 101 Introductory Geology I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

An introduction to the physical aspects of the earth's crust; rocks and minerals, their relationship to one another; and the surface and subsurface processes that operate on and in the earth.

**GLG 102 Introductory Geology II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

This course traces the history of the earth and life on earth as indicated by the sequence of rock layers, the distribution of surface sediments, former geographic relationships, the fossil record and the nature of ancient environments. (GLG 101 is strongly recommended.)

**GLG 110 Environmental Geology and Natural Hazards /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): GLG 101 or equivalent.

A survey of geologic processes that interact with human activities with emphasis on rivers and floods, landslides, earthquakes and volcanic action. Problems of water quality, resource availability and toxic and radioactive waste disposal will also be considered.

**GLG 240 Geology of Selected Regions /2-3 cr. hrs./2-3 periods (2-3 lec.)**

Prerequisite(s): GLG 101 (GLG 102 also recommended).

Geologic survey of a specific region. Includes the stratigraphy, structure, historical geology and most important geologic processes operating today. Also includes aspects of resource use by human occupants. May be taken four times for a maximum of twelve credit hours.

**GLG 244 Geological Field Excursions /1-3 cr. hrs./5 periods (0-1 lec., 1-5 lab)**

Prerequisite(s): Consent of instructor.

Field excursions to provide encounters with geologic features and processes. Overnight camping is usually involved, moderately strenuous overnight or day hikes may be undertaken. May be taken four times for a maximum of twelve credit hours.

**GLG 280 Geology of Arizona /3 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): GLG 101, 102.

The stratigraphy, structure and geologic history of Arizona and adjacent areas. Lab will consist of multi-day field excursions. Emphasis will be on discovery of the stories behind today's often spectacular Arizona scenery.

## GERMAN

### GER 110 Elementary German I /4 cr. hrs./4 periods (4 lec.)

Prerequisite(s): None.

Introduction to the German language. Includes developing proficiency in listening, speaking, reading, and writing. Also includes German cultural traditions.

### GER 111 Elementary German II /4 cr. hrs./4 periods (4 lec.)

Prerequisite(s): GER 110 or one year of high school German.

Continuation of GER 110. Includes increased proficiency in listening, speaking, reading, and writing. Also includes German cultural traditions.

### GER 210 Intermediate German I /4 cr. hrs./4 periods (4 lec.)

Prerequisite(s): GER 111 or two years of high school German.

Continuation of GER 111. Includes an intensive review of grammar, in addition to reading selected authors and writing short compositions. Also includes extensive practice in speaking German.

### GER 211 Intermediate German II /4 cr. hrs./4 periods (4 lec.)

Prerequisite(s): GER 210.

Continuation of GER 210. Includes an emphasis on efficient and contemporary language usage.

### GER 296 Independent Study in German /1-4 cr. hrs./1-4 periods (1-4 lab)

Prerequisite(s): Consent of instructor.

Independent study in German literature, grammar, or special projects under the supervision of an instructor. May be taken two times for a maximum of eight credit hours.

### GER 297 German Language Seminar: /.25-4 cr. hrs./25-4 periods (.25-4 lec.)

Prerequisite(s): Consent of instructor.

Reports and presentations on selected subjects related to the German language.

## GRAPHICS AND IMAGE TECHNOLOGY (OFFSET PRINTING)

### GRA 110 Computerized Photo-Copy Technology /3 cr. hrs./4 periods (2 lec., 2 lab)

Prerequisite(s): GRA 111, MAT 082 or assessment.

Principles and procedures of photo-copy operations. Includes photo-copier programming, finisher operations, optimizing productivity, troubleshooting and routine maintenance.

### GRA 111 Introduction to Offset Printing /3 cr. hrs./5 periods (2 lec., 3 lab)

Prerequisite(s): None.

Basic principles of graphic layout, design, and typography through computer applications. Includes printer's system of measurement, basic computer operations, electronic prepress, electronic pagemaking, planning and layout, computerized typesetting, using graphics, computer to plate, design and layout, major printing processes, graphic cameras, offset platemaking, image assembly, proofreading, and presswork.

### GRA 112 Digital Processes /3 cr. hrs./5 periods (2 lec., 3 lab)

Prerequisite(s): GRA 111.

Continuation of GRA 111. Includes a review of the printer's system of measurement, QuarkXpress operations, document construction in QuarkXpress, typography in QuarkXpress, QuarkXpress color, printing in QuarkXpress, document construction in Adobe Illustrator, typesetting in Adobe Illustrator, and printing in Adobe Illustrator.

### GRA 113 Customer Service Technology /3 cr. hrs./5 periods (2 lec., 3 lab)

Prerequisite(s): None.

Principles and procedures of working with customers in a printing environment. Includes printer's system of measurement, paper cutter operations, telephone communications, pantone matching system, paper, paper estimation, paper binding machines, cost estimating, bindery machine operations, and copy machine operations.

### GRA 114 Graphic Production (Mechanical) /3 cr. hrs./5 periods (2 lec., 3 lab)

Prerequisite(s): GRA 111.

Principles and procedures of mechanical preparation of graphic materials. Includes printer's system of measurement, planning and layout, pasteup, signature imposition, manual color separation, contacting techniques, copy preparation, process colors, camera work, and proofing.

### GRA 115 Digital Production (Computerized) /3 cr. hrs./5 periods (2 lec., 3 lab)

Prerequisite(s): GRA 111.

Principles and procedures for the preparation of graphic materials on computers. Includes printer's system of measurement, planning and layout, computerized layout, computerized pasteup, signature imposition, computerized color separation, copy preparation, digital plate preparation, and high resolution output devices.

### GRA 116 Graphic Imaging /3 cr. hrs./5 periods (2 lec., 3 lab)

Prerequisite(s): GRA 111.

Principles and procedures of electronic and mechanical production with an emphasis on screened reproduction for offset printing. Includes conven-

tional graphic arts photography, process cameras, graphic arts films, proofing systems, computerized halftone procedures, halftone modes, image adjustment, halftone screens, Adobe PageMaker, QuarkXpress, Adobe Illustrator, creating printable files, conventional graphic platemaking, digital graphic platemaking, and digital graphic presses.

**GRA 199 Co-op Related Class in GRA /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**GRA 199 Co-op Work in GRA /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**GRA 200 Publishing from the Desktop /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): GRA 111, and CGR 121 or 220.

Principles and procedures of electronic publishing for offset printing. Includes basic color theory, producing a printed piece, scanning, designing for output, resolution, trapping, ink, color corrections, bindery requirements, making proofs, creating a file, and performing Flight Check on files.

**GRA 201 Color Theory and Practice /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): GRA 116.

Theory and practice of color process photography. Includes color theory, ink mixing, camera operations, digital scanning, color separation, and creating multiple color originals.

**GRA 202 Offset Presswork /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): GRA 112.

Theory, operation and maintenance of small offset presses. Includes offset press theory and operations, plate preparation and maintenance, AB Dick press operations, Multilith press operations, digital offset press theory, line printing, halftone printing, and single and two color printing.

**GRA 221 Advanced Graphic Imaging (Digital and Conventional) / 3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): GRA 116.

Mechanical and digital production techniques of image assembly and plate creation for color. Includes conventional graphic arts photography, color theory, digital photography, mechanical image assembly, digital image assembly, page imposition, mechanical platemaking, digital platemaking, and color separation.

**GRA 222 Advanced Offset Presswork /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): GRA 202.

Continuation of GRA 202. Includes close registration presswork, work and turn, work and tumble, multiple color printing, color ink mixing, and maintenance operations.

**GRA 225 Offset Production /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): GRA 202.

Production printing used in the graphic communications industry. Includes estimating a job, layout and typesetting, camera operations, stripping and platemaking, press operations, and binding and finishing techniques.

**GRA 297 Graphic Technology Seminar: /.25-4 cr. hrs./25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Graphic technology job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**GRA 299 Co-op Related Class in GRA /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**GRA 299 Co-op Work in GRA /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

## HEALTH CARE

**HCA 096 Independent Studies in Health Sciences /1-6 cr. hrs./ 3-18 periods (3-18 lab)**

Prerequisite(s): None.

Special health-related projects permitting students to do research and experimental work. Proposals for projects must be submitted to preceptor and results of projects are presented as agreed in individual written contract.

**HCA 101 Here's To Your Health /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basics for developing a healthier lifestyle. Includes defining a healthy lifestyle, making knowledgeable decisions about health issues, improving lifestyle to enjoy optimal health and understanding the hazards that can jeopardize good health.

**HCA 102 Drug Calculations /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Computation of medication dosage. Includes abbreviations related to medications, systems of measurement, drug labels, and medication orders while focusing on accurate dosage calculation of medication.

**HCA 154 Introduction to Health Care /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the health sciences field. Includes the health care delivery systems, health careers, health science fundamentals and how to relate to the patient as a person.



**HCA 155 Introduction to Pharmacology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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.

**HCA 156 Psychotropic Medications /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Medication utilized in the treatment of psychiatric conditions. Includes drug actions, dosages, side effects, adverse reactions, interactions and responsibilities of the health care worker.

**HEALTH CONTINUING EDUCATION**

**HCE 198 Special Topics in Health Continuing Education: / .25-4 credit hours/.25-12 periods (0-4 lec., 0-12 lab)**

Prerequisite(s): None.

Customized course to meet the continuing training needs of individuals in the health field. Includes topics which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**HCE 250 Intravenous Medication Therapy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Licensed LPN or consent of instructor.

Techniques for licensed personnel to administer IV therapy with selected premixed medications and solutions. Includes principles of IV therapy, fluid balance in the body, local and systemic complications, therapy and patient care, medication delivery equipment, therapy monitoring and documentation, and skills demonstration.

**HCE 251 Initiating Intravenous Therapy /1.5 cr. hrs./2 periods (1 lec., 1 lab)**

Prerequisite(s): Licensed Practical Nurse or consent of instructor.

Theory and practice needed for the current LPN to start, maintain, and discontinue intravenous (IV) therapy (peripheral venipuncture) under the supervision of a registered nurse. Includes anatomy and physiology, sites for venipuncture, fluid replacement therapy, infusion equipment, intravenous solutions, flowrate of IV infusion, starting an IV infusion, nursing management of IV therapy, skills demonstration and practice, and clinical practice and certification.

**HCE 252 Homecare for the Ventilator Dependent Patient /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Basic theory and practice for the health care worker to gain and demonstrate knowledge and skills in home ventilator care. Includes airway and tracheotomy-related care, oxygen and inhaled medication administration and monitoring, and ventilator-related management and monitoring. Also includes discussions of psychological aspects of home ventilator care. Course completion provides certification as a ventilator care provider/professional.

**HEALTH EDUCATION**

**HED 136 Introduction to Health Sciences /3 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None.

Contemporary health-related issues for all dimensions of the individual. Includes aspects of physical, mental, social, and emotional health. Also includes health promotion and disease prevention.

**HED 140 First Aid and Cardiopulmonary Resuscitation /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Theory and practice in the following areas: Standard first aid and treatment of cardiopulmonary respiratory emergencies. (Same as HED 140A and B.)

**HED 140A First Aid /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Standard first aid for the immediate care for victims of injuries or sudden illness. Includes further care if medical help is delayed or is not available and urgent care needed in life threatening situations, such as arrested breathing, heart attack, stroke, heavy bleeding, poisoning and shock.

**HED 140B Cardiopulmonary Resuscitation (CPR) /.5 cr. hr./ .5 period (.5 lec.)**

Prerequisite(s): None.

Emergency first aid for respiratory failure and cardiac arrest. Includes one and two rescuer techniques for conscious or unconscious adults and children.



## HISTORY

### **HIS 101 Introduction to Western Civilization I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Pre-history to the Wars of Religion, a period extending from 10,000 BCE to 1648 CE. Includes transition from the pre-historic to the historic period, Greco-Roman world, Early, Central, and Late Middle Ages, and Renaissance and Reformation.

### **HIS 102 Introduction to Western Civilization II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History of the origins and development of the modern Western world. Includes Wars of Religion, the Enlightenment, the Eighteenth century, the Nineteenth century, and the Twentieth century.

### **HIS 105 Introduction to Chicano Studies /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The totality of Chicano life since 1848 and the struggle for self-determination.

### **HIS 113 Chinese Civilization /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introductory survey of the civilization of China from its origins to the present. Includes a focus on the historical development of the social, political, economic, religious, military, and intellectual systems of China.

### **HIS 114 Japanese Civilization /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introductory survey of the civilization of Japan from its origins to the present. Includes a focus on the historical development of the social, political, economic, religious, military, and intellectual systems of Japan.

### **HIS 115 Civilization of India /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Religious, cultural, and historical traditions of India from ancient times to the present. Includes origins of Indian civilization, heterodox challenge and Hindu response, coming of Islam and the new social vision, eclipse of Islam and the rise of Europe, Indian polity in transition, and nationhood and the modern world.

### **HIS 122 Tohono O'odham History and Culture /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Where have the Tohono O'odham people been, who are they, where are they going? In answering these questions, the class examines the history and culture of the Tohono O'odham.

### **HIS 124 History and Culture of the Yaqui People /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the cultural heritage of the Yaqui people and the history of their struggles to protect Yaqui land and culture.

### **HIS 127 History and Culture of the Mexican-American in the Southwest /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Who is the Mexican-American? What is his cultural heritage and what has happened to it in the United States? (Same as ANT 127.)

### **HIS 135 Pre-Columbian Art /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the art and architecture of the Americas from the earliest times to the period of the Spanish conquest. Includes archeology, art history, ethno-history, folklore, ethnography, and literature of Pre-Columbian peoples. Also includes recognition of major art styles and important sites. (Same as ANT 135 and ART 135.)

### **HIS 136 Masks /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of traditional masks and sculpture of the tribal peoples of North America, Africa, Asia, Indonesia, and Oceania. Includes archeology, art history, ethnohistory, folklore, ethnography, and literature of tribal peoples. Also includes recognition of major art styles and their cultural relationships. (Same as ANT 136 and ART 136.)

### **HIS 141 History of the United States I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the major developments in American History from the Columbian voyages to the Era of Reconstruction. Includes the actions and activities of the broad diversity of peoples who contributed to the evolution of American society during that time. Also includes the social, intellectual, and political aspects of early American life.

### **HIS 142 History of the United States II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the major developments in American History from the Era of Reconstruction to the present. Includes the actions and activities of the broad diversity of peoples who contributed to the evolution of American society during that time. Also includes the social, intellectual, and political aspects of early American life.

### **HIS 147 History of Arizona /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the major developments in the history of Arizona. Includes the Pre-Columbian period through the Spanish era, the Mexican Republic, the years as a U.S. territory, and the time since statehood to the present. Also

includes the contributions of the various peoples who have formed the unique cultural and ethnic fabric of this area.

**HIS 148 History of Indians of North America /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Origin and distribution of native populations of North America and the historical development and interrelations of cultures. (Same as ANT 148.)

**HIS 150 Afro-American History and Peoples /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

A history of Black people in American society. Their past, present and future are explored. Emphasis on their status and special problems as a minority group. (Same as ANT 150.)

**HIS 160 History and Peoples of Latin America I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The history of Latin America from the pre-Columbian period to the present with emphasis on the evolution of nationalism through the struggles of economic, cultural, political and social freedoms.

**HIS 161 History and Peoples of Latin America II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The emergence of nationalism and the struggles to achieve economic, social, cultural and political freedoms.

**HIS 165 History of Mexico /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The student moves from the pre-Columbian era, through the Spanish conquest and a century of political and social upheaval, to the nation of social and economic stability.

**HIS 170 History and Peoples of Africa /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

A survey of the political and cultural history of Africa south of the Sahara.

**HIS 180 Women in Western History /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the various roles women have had in the western world during the classic period, the medieval period and the modern age.

**HIS 244 History of the American West /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the patterns of American expansion and settlement in the Western United States. Includes mythology and terminology surrounding the West, factors that made the West, political power and warfare, cultural and gender contributions to the West, and historiographers of the American West.

**HIS 277 History of the Middle East: From the Rise of Islam to 1453 / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the history, religion, and culture of Muslim societies. Includes the Middle East in the Sixth Century CE, Muhammad and Qur'an, Islam and the Islamic State, Fatamids, Seljuks, and the Crusades, Mongols, Mamlue Egypt, and the Ottoman Turks.

**HIS 278 History of the Middle East: From 1453 to the Present Age / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the history, religion, and culture of the Islamic world from the fifteenth century through the modern period. Includes the Ottoman Empire, Safavid Empire, European imperialism and the early modern Middle East, world wars and the Middle East, and the modern Middle East.

**HIS 296 Independent Studies in History /2-4 cr. hrs./6-12 periods (6-12 lab)**

Prerequisite(s): Consent of instructor.

Independent history studies or projects arranged by the instructor.

**HIS 298 Advanced Topics in HIS: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Customized instruction developed to meet student needs or interests. Includes objectives and content to meet a topic of specific or timely interest. Credit may be earned for each topic taken.

**HOME ECONOMICS**

**HEC 127 Marriage and the Family /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Functions of the family. Emphasis on relationships within the family and how they affect the development of individuals in the home and community. Part I-Background: Kinship, family styles and tradition, sexuality, parenthood, working partners and the family today and tomorrow. Part II-The Dialogue: Relationships. (Same as SOC 127.)

## HONORS

### HON 101 Honors Colloquium /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): Admission to the Honors Program.

Dynamic, interdisciplinary course introducing honors students to the adventure of scholarly research, writing, and conversation. Includes defining and debating contemporary social issues in relation to history, science, politics, economics, technology, psychology, and the arts. Encourages students to develop their creativity; enhance their practices of critical reflection, argumentation, and collaboration; and explore their understandings of cultural diversity in local and global contexts.

### HON 210 Advisory Student Planning Board /1 cr. hr./1 period (1 lec.)

Prerequisite(s): HON 101 or 297.

The Advisory Student Planning Board (ASPB) is a selected group of six to eight students who function as an advisory group to the Honors Program coordinator and to the College Honors Advisory Council. The functions of the board include conducting student surveys on Honors courses to offer, recruiting qualified honors students at campuses and/or high schools, developing publicity and working with guest speakers. Campus representatives to the board will serve as Honors aides to the Campus Honors Coordinators. Aides will answer general questions, help plan and organize campus meetings and social events and bring campus student views to the ASPB meetings. May be taken three times for a maximum of three credit hours.

### HON 296 Honors Independent Study Project /1-3 cr. hrs./1-3 periods (1-3 lec.)

Prerequisite(s): HON 101.

Exploration of special interest areas for Honors students. Content to be determined jointly by student and faculty mentor. May be taken three times for a maximum of three credit hours.

### HON 297 Occupational Honors Seminar /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): Admission to the Honors Program.

Introduction to the Honors Program for students in an occupational program. Includes creative and critical thinking techniques, problem solving strategies, and research exploration. Also includes extensive analysis developed through student projects and presentations.

### HON 298 Advanced Topics in HON: /1-3 cr. hrs./1-3 periods (1-3 lec.)

Prerequisite(s): HON 101 and consent of instructor.

Advanced topics in honors which reflect current issues, trends, and technologies. May be taken three times for a maximum of three credit hours.

## HOSPITALITY

### HOS 100 Introduction to the Hospitality Industry /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Overview of the hospitality, travel and tourism industry. Includes hospitality careers, foodservice, restaurant organization, hotels and hotel organization, club organization, meeting industry, management and leadership, human resources, marketing and selling, marketing communications, management companies, franchising, and ethics in hospitality management.

### HOS 101 Front Office Procedures /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Principles and procedures of innkeeping. Includes guest services, creating a pleasant atmosphere, salesmanship, accounting, control, and legal aspects.

### HOS 102 Hospitality Financial Accounting I /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): MAT 082 or equivalent score on the mathematics assessment test.

Concepts and procedures used in the hospitality financial cycle. Includes accounting theory and practice, business organization, financial statement, chart of accounts, asset, liability, and equity accounts, revenue and expense accounts, effects of business transactions, debits and credits, accounting records, journalizing and posting, month-end accounting process, year-end accounting process, and computer applications.

### HOS 104 Hotel Food and Beverage Management /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Hotel food and beverage operations and management. Includes purchasing, receiving, issuing supplies, food production, budgeting and cost control, sanitation, and equipment selection and maintenance.

### HOS 112 Hospitality - Alcohol Intervention Procedures /1 cr. hr./1 period (1 lec.)

Prerequisite(s): None.

Procedures by which servers of alcoholic beverages can deal with alcohol abuse in their businesses. Includes effects of alcohol on the body, behavioral cues, effective responses, marketing, profitability, and Arizona liquor laws.

### HOS 120 Meetings and Convention Management I /3 cr. hrs./3 periods (3 lec.)

Prerequisite(s): None.

Basic principles of the meetings, convention, and trade show industry. Includes types of meetings, meetings as a social phenomenon, economic impact, suppliers and servicers to the industry, and the role of the meeting planner.

**HOS 130 Meetings and Convention Management II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HOS 120.

Principles for the professional meeting manager. Includes site selection, convention and visitors bureau, negotiations, contracts and lease agreements, program planning, budgeting and financial management, liability and insurance, housing, facilities, food and beverage arrangements, transportation, audio-visual equipment, and exhibition arrangements.

**HOS 131 Meetings and Convention Management III /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HOS 130.

Continuation of HOS 130. Includes participant needs, recreation, contracted services, promotion, printing, registration, mailing and shipping, support staff and suppliers, on-site communications, emergencies, evaluation techniques, wrap-up, and alternative meeting environments.

**HOS 150 Executive Housekeeping I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Foundations and applications of housekeeping operations. Includes housekeeping techniques, work controls, and security and safety. HOS 150A, 150B, and 150C together constitute HOS 150.

**HOS 150A Executive Housekeeping I: Housekeeping Techniques /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Organization and maintenance of a housekeeping department. Includes purpose, standards, procedure development, cleaning equipment, housekeeping chemicals, and interior finishes and partnerships. HOS 150A, 150B, and 150C together constitute HOS 150.

**HOS 150B Executive Housekeeping I: Work Controls /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Labor components of productivity. Includes work measurement techniques, quality management and improvement, and standards development and evaluation. HOS 150A, 150B, and 150C together constitute HOS 150.

**HOS 150C Executive Housekeeping I: Security and Safety /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

OSHA regulations, inspection, penalties, and compliance. Includes OSHA inspection, training for safety, handling chemicals safely, bloodborne pathogens, and safety and security. HOS 150A, 150B, and 150C together constitute HOS 150.

**HOS 151 Executive Housekeeping II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Foundations and applications of sanitation operations. Includes microbiology, chemical controls, and pest control. HOS 151A, 151B, and 151C together constitute HOS 151.

**HOS 151A Executive Housekeeping II: Microbiology /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles and methods to control infection. Includes infection control program, bacteria, infection, controlling infection, managing linens and waste, and the housekeeping role in infection control. HOS 151A, 151B, and 151C together constitute HOS 151.

**HOS 151B Executive Housekeeping II: Chemical Controls /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Use of chemicals and their applications in the workplace. Includes cleaning process, types of soil, chemistry for the non-chemist, building blocks of modern cleaners, soaps and detergents, types of cleaners, and chemical safety. HOS 151A, 151B, and 151C together constitute HOS 151.

**HOS 151C Executive Housekeeping II: Pest Control /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles and methods for controlling pests. Includes pest identification, pest control, pesticides, labels and labeling, safe use of pesticides, pesticide equipment, laws and regulations, and choosing a pest control service. HOS 151A, 151B, and 151C together constitute HOS 151.

**HOS 152 Executive Housekeeping III /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Foundations and applications of financial operations. Includes purchasing, accounting, and budgets. HOS 152A and 152B together constitute HOS 152.

**HOS 152A Executive Housekeeping III: Purchasing /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Procurement of supplies and equipment. Includes quality, quantity control and materials management, price determination, vendor selection and relations, negotiation techniques, purchasing law, systems and procedures, data processing, and purchasing management. HOS 152A and 152B together constitute HOS 152.

**HOS 152B Executive Housekeeping III: Accounting/Budgets /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Principals, concepts, and accounting processes conducted by businesses. Includes overview, principles and concepts of accounting, accounting terms,

records, posting information, controlling accounts, discounts and interest, accounting and bookkeeping, merchandise inventory, and budget usage. HOS 152A and 152B together constitute HOS 152.

**HOS 153 Executive Housekeeping IV /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Foundations and applications of selected housekeeping services. Includes interior design, waste management, and laundry and linen. HOS 153A, 153B, and 153C together constitute HOS 153.

**HOS 153A Executive Housekeeping IV: Interiors /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Interior environments for facilities. Includes history of interior design, elements and principals of design, size and content of custodial facilities, maintainability, color, textiles, lighting, walls and wallcovering decorating tips, wall groupings, flooring, furniture, and master planning. HOS 153A, 153B, and 153C together constitute HOS 153.

**HOS 153B Executive Housekeeping IV: Waste Management /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Effective handling of waste stream. Includes regulatory overview, waste minimization, waste stream analysis, incineration, recycling, and general waste disposal consideration. HOS 153A, 153B, and 153C together constitute HOS 153.

**HOS 153C Executive Housekeeping IV: Laundry and Linen /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Functions of a laundry and linen service with emphasis on health care applications. Includes linen processing, laundering, textiles, linen distribution, linen control, and quality control. HOS 153A, 153B, and 153C together constitute HOS 153.

**HOS 199 Co-op Related Class in HOS /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Concurrent enrollment in 199 Co-op Work.

See Cooperative Education section for description.

**HOS 199 Co-op Work in HOS /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): Concurrent enrollment in 199 Co-op Related Class.

See Cooperative Education section for description.

**HOS 201 Catering and Banquet Sales and Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HOS 110 and/or one year's experience in the hospitality-tourism industry.

Techniques of food and beverage sales and service operation. Includes functions of marketing, marketing plan, operations, menu planning, and advertising and promotion. (Same as RCF 201.)

**HOS 202 Hospitality Financial Accounting II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HOS 102.

Concepts and procedures used in the intermediate hospitality financial accounting cycle. Includes hotel revenue accounting and controls, hotel expense accounting, periodic inventory method, hotel financial statements, analysis of financial statements, statement of cash flows, property and equipment accounting, other noncurrent asset accounting, inventory accounting, hospitality payroll accounting, internal control, and selected accounting topics.

**HOS 211 Hospitality Sales and Marketing Application I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Minimum of one year's experience working in the hospitality industry.

Principles and techniques of sales and marketing. Includes office organization, sales techniques, advertising, public relations, publicity and a marketing plan.

**HOS 212 Hospitality Sales and Marketing Application II /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): HOS 211 or a minimum of one year's experience working in the hospitality industry.

Development of a one-year marketing plan for a full-service property. Includes situation analysis, evaluation, research, revenue and budget projections.

**HOS 235 Hospitality Law /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HOS 100.

Examination of the legal aspects of hospitality management. Includes basic legal principles governing hospitality operation, hotel-guest relationship, hotel's duties to guests and others, laws relating to restaurants, foodservice, and bars, and laws relating to hotel employees and general hotel operations.

**HOS 245 Hospitality Human Resource Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HOS 100.

Examination of personnel issues. Includes recruitment, selection, orientation, training, wage and benefit, legal issues, and employee appraisal.

**HOS 297 Hospitality Seminar: /25-4 cr. hrs./25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Hospitality job-related training. Includes presentations by specialists in a given area and topics of timely or limited interest.

**HOS 299 Co-op Related Class in HOS /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Concurrent enrollment in 299 Co-op Work, and a minimum of 12 credit hours of Hospitality prefix courses or one year of related industry work experience.

See Cooperative Education section for description.



**HOS 299 Co-op Work in HOS /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): Concurrent enrollment in 299 Co-op Related Class, and a minimum of 12 credit hours of Hospitality prefix courses or one year of related industry work experience.

See Cooperative Education section for description.

**HUMAN DEVELOPMENT EDUCATION**

**HDE 050 Approaching Mathematics Positively /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Designed for students who avoid taking mathematics courses or who have anxiety in mathematics courses. Includes defining mathematics anxiety, underlying causes, and practicing anxiety reduction techniques. Also includes mathematics study and test-taking. (Same as MAT 050.)

**HDE 098 Topics in Human Development Education: /5-4 cr. hrs./5-4 periods (.5-4 lec.)**

Prerequisite(s): None.

Topics in Human Development which reflect current issues, trends, and needs. Credit may be earned for each topic taken.

**HDE 100 College Success Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Skills and techniques required for being an efficient student. Includes goal setting and problem solving, time management, organizing study materials/study techniques, college/community resources, learning styles, concentration and memory, note-taking techniques, tips for making note-taking easier, test-taking techniques, and test anxiety.

**HDE 100A How To Study /25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): None.

Instruction and practice in techniques required for being an "efficient" student. Includes goal setting and problem solving, time management, organizing study materials/study techniques, and college/community resources. HDE 100A, 100B, 100C, and 100D together constitute HDE 100.

**HDE 100B Memory and Concentration /25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): None.

Strategies for improving memory and concentration. Includes learning styles and concentration and memory. HDE 100A, 100B, 100C, and 100D together constitute HDE 100.

**HDE 100C Notetaking Tips /25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): None.

Systematic instruction and practice taking notes from lectures and print

material. Includes notetaking techniques and tips for making notetaking easier. HDE 100A, 100B, 100C, and 100D together constitute HDE 100.

**HDE 100D Testing Tips /25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): None.

Instruction and practice in preparing for and taking tests. Includes test taking techniques and test anxiety. HDE 100A, 100B, 100C, and 100D together constitute HDE 100.

**HDE 101 Becoming A Master Student /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Development of personal and academic skills to maximize learning and success in a college setting. Includes personal skills, library skills, learning styles, study skills and critical thinking skills.

**HDE 104 Career and Self-Management Skills /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Acceptance into the Women in Progress program.

Techniques for developing academic, personal, and professional skills of the single parent/homemaker. Includes college success tools, skills, community resources, personal, academic and financial aid goals, time management, self-esteem, stress management, career exploration, gender awareness, assertiveness training, critical thinking, and job development.

**HDE 105 Transfer Strategies /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Transitioning to a college or university. Includes planning for successful transferring, community college/university resources, and transition procedures. Also includes policies and applications activities for transferring to a university or college of choice.

**HDE 106 Advanced Career and Self-Management Skills /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): HDE 104.

Advanced techniques for developing academic, personal and professional skills of the single parent/homemaker. Includes assessing and setting personal, academic, professional, and financial aid goals, college success skills, co-dependency, self-esteem, communication techniques for positive results, lifestyle wellness, emerging career exploration, job development, personal budgeting, time and stress management, and money management and investments.

**HDE 110 Developing Self-Esteem /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Exploration and assessment of student's current self-esteem level. Includes definition, early self-esteem theorists, components of self-esteem development, global and area specific self-esteem, personal assessment, influence of significant others, life script, personality preferences, cultural influences, communication skills, irrational beliefs, cognitive behavioral change strategies, risk taking, and goal development.



**HDE 120 Personal Development /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of self-awareness for students desiring a better understanding of themselves and others. Includes assessment of personal strengths, values, feelings and attitudes and development of skills needed for improving self-confidence, relationships with others, problem solving, decision making and goal setting. Separate sections may be taught for special groups.

**HDE 125 Overcoming Co-Dependency /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Exploration of behavior patterns associated with co-dependency and their origins. Development of self-awareness in this area and support for initiating change of self-defeating behaviors.

**HDE 130 Stress Management /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Principles and techniques for understanding and dealing with stress in daily life. Includes information and experiential activities applicable to students and the learning process. Emphasis on the interrelation of physical, mental and emotional health.

**HDE 135 Wellness /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of the concept of wellness and the individual as a holistic system. Includes information and experiential activities to increase understanding of physical, mental, emotional, social and spiritual factors in creating wellness.

**HDE 140 Assertiveness Training /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Development and strengthening of assertive skills, including improving self confidence and ability to relate to others. Emphasis on the integration of these skills into daily life. Separate sections may be taught for special groups.

**HDE 145 Relationships Skills for the 21st Century /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of skills needed to create positive relationships with others. Includes understanding and appreciating differences in people, basic skills such as cooperation and teamwork, and advanced relationship tools including negotiation and conflict resolution. Emphasis is on workplace applications.

**HDE 170 Dynamics of Leadership /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Supervised practical training for advanced students involved in leadership positions. Provides opportunities to strengthen leadership skills developed in previous courses. May be taken two times for a maximum of four credit hours.

**HDE 180 Personal Skills for the Modern Workplace /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Exploration of personal skills needed to cope with the modern workplace. Includes self assessment and strategies for skill development to enhance career success.

**HDE 189 Career Exploration /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Development of skills and knowledge necessary to make career and college major choices. Includes values clarification, skill identification, interest pattern identification, personality preference, adult developmental issues, eliminating stereotypes, career research, information interview, decision making, and developing a career/educational plan.

**HDE 195 Securing a Job /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of the skills and confidence necessary to get a job. Includes locating job openings, resume writing, interview techniques, effectiveness on the job and improving employment opportunities.

**HDE 198 Special Topics in Human Development Education: / .5 to 4 cr. hrs./ .5-4 periods (.5-4 lec.)**

Prerequisite(s): None

Special topics in Human Development which reflect current issues, trends, and needs. Credit may be earned for each topic taken.

**HDE 298 Advanced Topics: /.25-3 cr. hrs./ .25-3 periods (variable lec., variable lab)**

Prerequisite(s): None.

Advanced topics in human development which reflect current trends and subjects of student, professional and community concern. Credit may be earned for each topic taken.

**HUMANITIES****HUM 101 Introduction to Humanities /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to Humanities. Includes discussion of the principles of and examples from both western and non-western traditions covering art/architecture, poetry, drama, music/dance, prose, religion, and philosophy from the ancient world to 1400.

**HUM 107 Humanities Through the Arts /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Humanities through a study of seven major art forms: film, drama, music, literature, painting, sculpture, and architecture. Includes historical development, elements used in creating works of art, meaning and form, and criticism or critical evaluation of each art form.

**HUM 110 Humanities I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to major cultures from Sumer through the Reformation. Includes a focus on the general history of ideas, art, architecture, religion, philosophy, drama, music, and literature. Also includes readings from the *Epic of Gilgamesh*, Homer, Sophocles, Aristophanes, Plato, Aristotle, Virgil's *Aeneid*, the Hebrew and the Christian Scriptures, St. Augustine, heroic and religious works of the Middle Ages, Dante, Chaucer, Machiavelli, and Shakespeare.

**HUM 111 Humanities II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the culture of the modern western world from the Counter Reformation-Baroque to the present. Includes a focus on the general history of ideas, art, architecture, religion, philosophy, drama, music and literature. Also includes readings from the Baroque philosophers, Cervantes, Voltaire, Rousseau, Goethe, Romantic, pre-modern and contemporary literature, poetry, and drama.

**HUM 131 Mythology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Myths, legends, and folktales of the Greeks and Romans. Includes basic concepts of myths, major divinities and stories about them, artistic representations, effects of ancient myths on western literary tradition, and similarities and differences between major mythic systems.

**HUM 196 Independent Studies in Humanities /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Reading and research projects to be arranged with instructor.

**HUM 251 Western Humanities I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to major cultures from Sumer through the early Christian era. Includes a focus on the general history of ideas, art, architecture, religion, philosophy, drama, music, and literature. Also includes readings from the *Epic of Gilgamesh*, Homer, Sophocles, Aristophanes, Plato, Aristotle, Vergil's *Aeneid*, the Hebrew and the Christian Scriptures, and St. Augustine.

**HUM 252 Western Humanities II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to major western cultures from the early Medieval through the Baroque. Includes a focus on the general history of ideas, art, architecture, religion, philosophy, drama, music, and literature. Also includes readings

from heroic and religious works of the Middle Ages, Dante, Chaucer, Machiavelli, Shakespeare, Cervantes, and Baroque philosophers.

**HUM 253 Western Humanities III /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the culture of the modern western world from the Enlightenment to the present. Includes a focus on the general history of ideas, art, architecture, religion, philosophy, drama, music and literature. Also includes readings from Voltaire, Rousseau, Goethe, Romantic, pre-modern and contemporary literature, poetry, and drama.

**HUM 260 Intercultural Perspectives /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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.

**HUM 270 Meditation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles, techniques, and practice of meditation. Includes information and experiential activities to increase understanding of physical, mental, emotional, social, and spiritual factors in meditation and stress reduction. (Same as PSY 270.)

**HUM 298 Advanced Topics in the Humanities: /1-3 cr. hrs./1-3 periods (1-3 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics in the humanities which reflect current issues and trends. Credit may be earned for each topic taken.

**INSTITUTIONAL FOODSERVICE**

**IFS 101 Institutional Food Sanitation /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles and practices of food safety and sanitation. Includes sanitary food handling, contamination and food-born illnesses, purchasing and storing food, sanitation of facilities and equipment, and safety.

**IFS 102 Institutional Food Safety /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles and practices of food safety and sanitation. Includes employee safety, accident prevention techniques, fire safety, pest control, housekeeping management, and the functions of the local health department and the Center for Disease Control.

**IFS 103 Institutional Foods Preparation: Salad Making /1 cr. hr./  
1.5 periods (1 lec., .5 lab)**

Prerequisite(s): None.

An introduction to the creation, display and storage of salads. Includes eye appeal, texture, color contrast, artistic touch and harmony of combinations. Also includes the cost-out and preparation of a salad bar.

**IFS 104 Institutional Foods Preparation: Sandwich Making /1 cr. hr./  
1.5 periods (1 lec., .5 lab)**

Prerequisite(s): None.

An introduction to the creation, display and storage of sandwiches. Includes sandwich fillings, eye appeal, color contrast, artistic touch and harmony of combinations. Also includes the cost-out and preparation of a sandwich buffet.

**IFS 106 Institutional Foods Preparation: Bread Making /1 cr. hr./  
1.5 periods (1 lec., .5 lab)**

Prerequisite(s): None.

Essentials of bread making. Includes preparation of yeast rolls and breads. Emphasis on use and care of equipment, sanitation, safety and hygiene.

**IFS 107 Institutional Foods Preparation: Dessert Making /1 cr. hr./  
1.5 periods (1 lec., .5 lab)**

Prerequisite(s): None.

Essentials of dessert making. Includes preparation of cakes, cookies, tarts, doughnuts and pies. Emphasis on use and care of equipment, sanitation, safety and hygiene.

## INTERNATIONAL BUSINESS STUDIES

**IBS 120 Cultural Similarities and Differences Between the United States and the Foreign Country /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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.

**IBS 135 The International Career /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

International complexities of the work force within American businesses. Includes global changes for an international work force, skills and cross-cultural training necessary for the international job market, requirements for

support staff and middle management, profiles of international complexes offering employment, and suggestions and processes for employment in the international field.

**IBS 136 Global Economy /3 cr. hr./3 period (3 lec.)**

Prerequisite(s): None.

Fundamental principles of the global economy. Includes a survey of international trade, currency exchange rate, balance of payment, price levels and currency depreciation and policy recommendations available to governments. Also includes methods of limiting imports and eliminating trade barriers.

**IBS 140 Basic Techniques of International Trade /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of international trade. Includes political and legal factors, export documentation, customs regulations, financial considerations, trade zones, trading companies, communications, exporting techniques, and case studies.

**IBS 160 Hosting Foreign Business Personnel /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Training in routine hosting considerations with sensitivity to the culture of the visitor. Includes the initial greeting, orientation, assistance with legal documents, locating a support system, housing, and transportation.

**IBS 170 Doing Business with Mexico /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

United States and Mexico conducting business together. Includes current conditions, categories of business, financial arrangements, maquiladoras, the bureaucracy, culture, and communication.

**IBS 298 Advanced Topics in International Business: /.25-4 cr. hrs./  
.25-4 periods (.25-4 lec.)**

Prerequisite(s): None.

Advanced topics in international business which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

## INTERPRETER TRAINING

**ITP 105 Fingerspelling and Numbers /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): SLG 102.

Enhancement of receptive and expressive sign language skills with the manual alphabet and numbers. Includes methodology, theory, and application. Also includes states, major cities, basic mathematical functions, and common acronyms. Additional lab hours are required outside of regularly scheduled class.

**ITP 200 Introduction to the Deaf Community /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SLG 202, WRT 102.

Explores the history of American Sign Language, the Deaf community, and the experiences of deaf individuals. Includes norms, values, traditions, and rules of social behaviors. Also includes cross-cultural interactions between hearing and deaf people.

**ITP 203 Linguistics of American Sign Language /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SLG 202 and WRT 102.

Introduction to the linguistic structure of American Sign Language (ASL). Includes a comparison of semantics, morphology, phonology, syntax, as well as other components of ASL to English in light of current research. Also includes integration of linguistic information introduced in earlier ASL courses into an applied linguistic framework.

**ITP 205 Advanced Fingerspelling and Numbers /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): SLG 201.

Advanced receptive and expressive sign language skills with the manual alphabet and numbers. Includes lexicalized fingerspelling, advanced mathematical functions, and related national acronyms. Additional lab hours are required outside of regularly scheduled class.

**ITP 210 Introduction to Interpreting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SLG 202, WRT 102.

Introduction to the field and role of a sign language interpreter. Includes in-depth examination of the interpreting process, interpreter's philosophical base and behavior, interpreter's Code of Ethics, and professional options. Also includes basic consecutive interpreting.

**ITP 215 Classifiers, Mimetic Description and ASL Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SLG 202, WRT 102.

Development of sign language skills through the use of classifiers, mime and ASL literature. Includes direct address, physical representations, spatial representations, perspective, and traditional deaf folklore. Additional lab hours may be required outside of class.

**ITP 220 Interpreting I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITP 210, WRT 102.

Practical experience in consecutive and simultaneous interpreting in increasingly complex and diverse situations. Includes text analysis and review, development of interpreting skills such as cloze, short term memory, chunking, shadowing, and dual task training. Also includes feedback on sign selection, expressiveness, clarity, fluency and speed.

**ITP 250 Interpreting II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITP 220.

Continuation of ITP 220. Development of expressive and receptive interpreting skills in educational and community situations. Includes an emphasis on specialized situations such as platform, interview, television, medical, legal, and deaf-blind interpreting. Students will be required to perform additional lab hours outside of classroom schedule.

**ITP 268 Etymology /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): SLG 202.

Designed to improve and increase vocabulary for sign language interpreters. Includes use of structural analysis and contextual clues. Also includes English idioms, foreign phrases, and multiple meaning words.

**ITP 270 Sign to Voice /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SLG 202.

Interpreting basic sign language structures into the spoken word. Includes receptive processing tools, voicing considerations, and vocabulary enhancement. Additional lab hours outside of class are required.

**ITP 280 Advanced Sign to Voice /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITP 270.

Interpreting complex sign language structures into the spoken word. Includes ASL/English comparisons, vocabulary enhancement, and improvement of technical skills. Additional lab hours are required outside of regularly scheduled class.

**ITP 285 Educational Interpreting/Transliterating /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITP 220.

Interpreting in educational settings. Includes skill-building, team building, transliterating, and issues specific to educational interpreting. Additional lab hours are required outside of regularly scheduled class.

**ITP 290 Interpreter Training Field Experience /2 cr. hrs./ 6 periods (1 lec., 5 lab)**

Prerequisite(s): ITP 220 or consent of instructor.

Supervised interpreting opportunities in community settings. Includes practicum experience, observations, and classroom discussions focusing on job preparation and current issues.

**ITP 298 Advanced Topics in Interpreting: /1-4 cr. hrs./1-3 periods (1-3 lec., 0-3 lab)**

Prerequisite(s): Consent of instructor.

Development and enrichment of interpreting-related skills by a variety of specialized interpreting-related topics and experiences. Credit may be earned for each topic taken.

**ITALIAN****ITA 110 Elementary Italian I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the Italian language. Designed to provide proficiency in basic communication (listening, speaking, reading and writing). Emphasis on Italian cultural traditions.

**ITA 111 Elementary Italian II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITA 110.

Continuation of ITA 110. Designed to provide increased proficiency in listening, speaking, reading and writing. Continued emphasis on Italian cultural traditions.

**ITA 210 Intermediate Italian I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITA 111.

Continuation of ITA 111. Includes the review of grammar, in addition to reading and writing short compositions, and oral practice in the Italian language. Also includes Italian cultural traditions and customs.

**ITA 211 Intermediate Italian II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): ITA 210.

Continuation of ITA 210. Includes advanced grammar usage, in addition to reading and writing short compositions, and oral practice in the Italian language. Also includes Italian cultural traditions and customs.

**JAPANESE****JPN 105 Conversational Japanese /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Elementary Japanese conversation. Includes the development of speaking, listening and communication skills needed by business people and travelers in Japan. Also prepares students for JPN 110 and 111.

**JPN 110 Elementary Japanese /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): None.

Introduction to the Japanese language. Designed to provide proficiency in basic communication (listening, speaking, reading and writing). Emphasis on Japanese cultural traditions.

**JPN 111 Elementary Japanese II /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): JPN 110.

Continuation of JPN 110. Basic listening, speaking, reading and writing skills, using elementary Japanese vocabulary and grammatical structures.

**JPN 198 Special Topics in Japanese: .25-3 cr. hrs./25-3 periods (.25-3 lec.)**

Prerequisite(s): None.

Special topics in Japanese designed for student interests. Credit may be earned for each topic taken.

**JPN 210 Intermediate Japanese I /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): JPN 111.

Continuation of Japanese 111. Further development of conversational, writing and reading skills. Cultural values and differences form an integral part of discussions in the target language.

**JPN 211 Intermediate Japanese II /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): JPN 210.

Continuation of Japanese 210 with emphasis on student development of competencies through oral presentations, journals and continued acquisition of Japanese characters.

**LANDSCAPE TECHNICIAN****LTP 100 Landscape Today and Tomorrow /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of the landscape contracting industry: its history, current status and projection for the future. Special attention to career opportunities within various specialties.

**LTP 120 Plant Pathology, Pests and Controls /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): BIO 184.

In-depth study of the pests, insects and diseases which damage shrubs, flowers, ornamental trees, turf grass and interior foliage. Emphasis on identification, control and treatment of the above problems as well as on the theory of utilizing chemicals, pesticides, herbicides and biological control.

**LTP 130 Soils Management /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): None.

Analysis of soil types and fertility requirements of plants. Includes derivation, classification and evaluation of soils and the chemical, biological and physical requirements for plant growth.

**LTP 160 Plant Usage and Identification I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Principles and techniques of plant usage and identification. Designed to familiarize the student with where and how to use plants, plant identification, and a short history of plant taxonomy. Emphasis on the one hundred and fifty most common landscape plants and interior plants used in the southwest.



**LTP 199 Co-op Related Class in LTP /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**LTP 199 Co-op Work in LTP /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**LTP 200 Landscape Management Systems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of planning and implementing landscape projects. Includes management information systems, foreman duties, customer relations and contract laws. Also includes at least one site visit. Prepares the student to manage all phases of a landscape project.

**LTP 205 Irrigation Design I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Design of turf, ornamental and drip (emitter) irrigation systems. Includes establishment of design criteria, selection and application of system components, preparation of irrigation plans and specifications and basic estimating procedures. Intended for students and professionals interested in irrigation systems.

**LTP 206 Irrigation Design II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LTP 205.

Covers the design of large-scale irrigation systems, such as apartment complexes, parks and roadway projects, using both conventional sprinkler and drip systems. Establishing design criteria, selection and application of system components, preparation of irrigation plans and specifications will be included in the course.

**LTP 210 Irrigation Installation /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Introduction to irrigation systems for technicians in the landscape and irrigation industries. Includes turf, ornamental, and drip (emitter) systems. Also includes materials, equipment, installation techniques, blueprint reading, and basic maintenance and repair procedures.

**LTP 215 Interior Plantscape Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Design and maintenance of the total interior horticultural environment. Includes principles of design, design procedures, and horticultural and business practices. Also includes working with interior plantscapers, interior designers, architects and clients, with an emphasis on the creative aspects of the process. (Same as DES 215.)

**LTP 230 Landscape Maintenance /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of management and technical skills required to operate and maintain southwestern landscapes. Includes water management, pests and disease controls.

**LTP 260 Basic Landscape Design /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Designing residential and light commercial landscape sites. Includes drafting tools and techniques, site planning, preparation of working drawings and specifications, and construction cost estimating.

**LTP 270 Plant Usage and Identification II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): LTP 160 and 260 or concurrent enrollment in LTP 260.

Continuation of LTP 160. Includes advanced studies in the principles and techniques of plant usage and identification. Also includes familiarization with where and how to use plants, plant identification, plant taxonomy and emphasis on two hundred additional plants used in landscapes and interior applications in the southwest.

**LTP 290 Landscape Field Experience /1-4 cr. hrs./5-20 periods (5-20 lab)**

Prerequisite(s): Consent of instructor.

Supervised landscape experience with a private company, government agency, or non-profit organization. Includes work-site experiences such as the bid process, customer relations, employer/employee relations, wholesale purchasing, and installation and maintenance techniques. Students should be able to do physical labor under difficult conditions. May be taken two times for a maximum of eight credit hours.

**LTP 298 Advanced Topics in Landscape Technology /1-4 cr. hrs./1-16 periods (0-4 lec., 0-12 lab)**

Prerequisite(s): Consent of instructor.

Advanced topics which reflect the most current trends and concepts in landscape technology. May include water management, pest and disease control, regulations, operations, and management. Credit may be earned for each topic taken.

**LATIN**

**LAT 110 Elementary Latin I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the Latin language. Designed to develop proficiency in Latin-to-English reading skills and vocabulary building. Also includes background in Roman cultural traditions.

**LAT 111 Elementary Latin II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): LAT 110.

Continuation of LAT 110. Designed to provide increased proficiency in Latin-to-English reading skills and vocabulary building. Continued emphasis on Roman cultural traditions.



**LAW ENFORCEMENT RELATED INSTRUCTION****LEN 100 Careers in Law Enforcement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of careers and career paths in law enforcement. Includes exploration of the broad scope of job functions and opportunities in various law enforcement agencies. Also includes awareness of the selection criteria, life style, and necessary personal choices for a career in this field.

**LEN 105 Ethics and Leadership in Law Enforcement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of ethical behavior for law enforcement professionals. Includes establishing a leadership role within the community. Also includes the Law Enforcement Code of Ethics, and the Canons of Police Ethics as a basis to establish trust and protect a positive image of law enforcement.

**LEN 110 Multicultural Issues in Law Enforcement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of the value of diversity in a law enforcement environment. Includes the standards and norms of different groups and individuals and how they impact the attitudes and behaviors. Also includes the need to adapt interactions without compromising established societal norms.

**LEN 115 Interpersonal Relations in Law Enforcement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of the interactions of law enforcement professionals with peers and the public. Includes the unique roles and expectations which occur when entering a law enforcement career. Also includes specific methods and techniques used in situational interactions.

**LEN 120 Introduction to Law Enforcement /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Overview of the components of the criminal justice system, their functions, responsibilities and interrelationships. Includes a historical perspective, an outline of regulatory agency functions, responsibilities, jurisdictional limitations, techniques of management and supervision, problem solving strategies, and the relationship between employee and supervisor. Also includes standards required of law enforcement personnel and the functions and responsibilities of the Arizona Peace Officer Standards and Training Board.

**LEN 125 Law and Legal Matters I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LEN 120.

Examination of the basic concepts, phrases and definitions needed to study criminal law. Includes an analysis of constitutional requirements, statutes and case law on search and seizure, the conditions under which an officer

or citizen may make an arrest, an officer's duties and responsibilities prior to and during the arrest, and the rules of evidence. Also includes summonses and subpoenas, civil processes, and the functions of the various courts, agencies, and laws relating to juveniles.

**LEN 126 Law and Legal Matters II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LEN 125.

Continuation of LEN 125. Includes the proper techniques for giving effective police testimony, outline of the United States Constitution, Arizona Revised Statutes (ARS) Title 13, and a review of common civil and criminal liability facing law enforcement agencies and officers.

**LEN 130 Patrol Procedures /3 cr. hr./3 periods (3 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Study of the types, purposes and techniques of police patrol. Includes citizen protection, crime prevention, emergency and non-emergency situations, safely conducting a high risk vehicle stop, domestic disputes and managing crisis situations, mental illness and criminal behavior, crimes in progress, indicators of alcohol intoxication, and symptoms of medical conditions. Also includes use of police radio, hazardous materials, disasters, hate motivated acts, fires, and civil disputes.

**LEN 135 Traffic Enforcement and Investigation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Introduction to the attitude and techniques essential in dealing effectively with traffic violators. Includes the effects of alcohol and drugs on drivers and techniques for obtaining evidence for successful prosecution, the legal basis of the Uniform Traffic Citation, specific techniques for stopping and approaching suspects in vehicles, traffic collision investigation, and proper methods for taking and recording evidence at the collision scene. Also includes techniques for directing and controlling vehicular and pedestrian movements by means of hand signals, and applicable sections of the ARS relating to law enforcement authority.

**LEN 140 Criminal Investigation /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Principles common to all types of investigation. Includes conducting a proper search, sketching the crime scene, recording and preserving notes, packaging and marking evidence for identification, synthesizing information into a final report, the functions of a crime laboratory, proper interviewing and questioning techniques, and methods of fingerprinting. Also includes investigating the more common sex crimes, procedures for investigating cases involving death, organized criminal activities, techniques used in the investigation of assault, burglary, robbery, auto theft, child abuse, missing persons, and narcotics and dangerous drug violations.

**LEN 145 Community and Police Relations /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Benefits and methods of developing positive police-community relations and recognizing cultural differences within the community. Includes the emotional and behavioral indicators of crime victims, personal communication, crime prevention functions of the patrol officer and various crime prevention programs.

**LEN 150 Records and Reports /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Introduction to the characteristics of good reports and field notes and obtaining and using investigative information from police records systems. Includes form, style, and procedures for writing various reports, techniques for developing an accurate narrative, and proper and improper conclusions. Also includes modern technology in police data processing and information available through the use of local state and national records.

**LEN 160 Life Management Skills for Law Enforcement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of law enforcement as a hazardous and stressful occupation. Includes methods of dealing with the everyday problems of life at home and at work. Also includes the administration of self-assessments and techniques to help attainment of a desirable lifestyle.

**LEN 163 Research and Planning /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Introduction to research methods and planning concepts. Includes problem solving steps, research design, information gathering techniques, and oral and written reports.

**LEN 170 Citizen's Academy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the law enforcement agency. Includes its role in the community and the criminal justice system. Also includes mission, values, ethics, resources, skills, and collaborations.

**LEN 180 Introduction to Private Security /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the private security profession. Includes law enforcement services, responsibilities and workplace skills, legal matters, patrol procedures, search and seizure, crime scene management, and crime prevention techniques.

**LEN 190 Field Supervision /3 cr. hrs./15 periods (15 lab)**

Prerequisite(s): Employment as a probationary law officer.

Supervised application of the knowledge, skills, and abilities under field conditions as a part of probationary status. Includes requirements that the

probationary officer demonstrate proficiency in patrol operations that meet agency standards.

**LEN 198 Special Topics in Law Enforcement: /.25-4 cr. hrs./25-4 periods (.25-4 lec.)**

Prerequisite(s): Consent of instructor.

Special topics in law enforcement which reflect current issues and trends. Credit may be earned for each topic taken.

**LEN 205 Police Proficiency Skills I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Admission to the Law Enforcement Academy or consent of instructor.

Methods of first aid and stress management. Includes providing emergency medical care to victims, legal and civil issues, and proper procedures for handling various traumas. Also includes the manifestations and techniques of managing personal job-related stress.

**LEN 206 Police Proficiency Skills II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LEN 205.

Continuation of LEN 205. Includes the mechanical, safety features, servicing, and firing of the service weapon. The student must achieve a minimum qualification score to successfully complete this course.

**LEN 207 Police Proficiency Skills III /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LEN 206.

Continuation of LEN 206. Includes the development and demonstration of each participant's mental and physical condition through structured exercise and classroom education. Also includes various techniques for maintaining physical control of disruptive, combative, or potentially dangerous subjects, including restraint holds. Students must score in the fair range for all measures, except body fat, to complete this course.

**LEN 208 Police Proficiency Skills IV /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LEN 207.

Continuation of LEN 207. Includes basic defensive driving techniques, hazardous road conditions, dynamics of a moving vehicle, the driving task, pursuit and high speed response procedures, high speed vehicle control, and methods to successfully stop fleeing vehicles. Also includes the liabilities and responsibilities associated with the use of force, factors in use of force situations, and proper police baton techniques.

**LEN 250 Basic Follow-up Investigations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Survey of basic follow-up investigative resources and techniques utilized by detectives in law enforcement. Includes evidence collection, role of the County Attorney, laws regarding search and seizure, laws concerning statements and confessions, obtaining a search warrant, media interviews, and safety equipment. Also includes crime scene management and interrogation techniques.

**LEN 260 Financial Analysis in Criminal Justice /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Consent of instructor.

Techniques of financial analysis for criminal justice applications. Includes sources of financial information, analysis of financial documents, and preparation of schedules to provide evidence of financial crimes.

**LEN 270 Principles of Law Enforcement Supervision /3 cr. hrs/3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Basic skills and concepts of law enforcement supervision. Includes leadership, reports, performance communications, staff skills, police liability, community problem solving, and customer service.

**LEN 271 Skills for Community-Oriented Policing /4 cr. hrs/4 periods (4 lec.)**

Prerequisite(s): None.

Provides the basis for effective interactions between law enforcement officers and the community members. Includes an introduction to the community policing philosophy, conflict resolution, personal accountability, preparing for change, and interpersonal skills. Also includes fundamentals of crime prevention.

**LEN 274 Supervision of Community-Oriented Policing I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of the skills needed to supervise a basic community-oriented policing program. Includes various perspectives of community-oriented policing, team building, empowerment, time management, public speaking, and employee development.

**LEN 275 Supervision of Community-Oriented Policing II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Continuation of LEN 274. Includes examination of the advanced skills needed to supervise a community-oriented policing program. Also includes the appropriate organizational structure and the concept of community government.

**LEN 280 General Instructor /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Arizona Police Officer Standards and Training General Instructor certification. Includes demonstration and written requirements.

**LEN 290 Law Enforcement Field Experience /3 cr. hrs./15 periods (15 lab)**

Prerequisite(s): LEN 274, 275.

Supervised placement in community-oriented policing. Includes development, implementation, and evaluation of a project in the community.

**LEN 298 Advanced Topics in Law Enforcement /.25-4 cr. hrs./ .25-4 periods (.25-4 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics in law enforcement which reflect current issues and trends. Credit may be earned for each topic taken.

**LEGAL ASSISTANT****LAS 101 Introduction to Legal Assistant Careers /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Role, responsibilities and ethical standards of legal assistant employment and regulation. Includes an overview of: ethical rules, law office administration and systems, communication, interviewing, investigation, evidence, legal research, legal analysis, state and federal judicial systems, litigation, and specialty areas of law.

**LAS 102 Civil Litigation Procedures I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 112 or higher, or a reading assessment score of at least 12th grade in both vocabulary and comprehension as measured by the college assessment process.

Principles and procedures for commencement of civil litigation. Includes rules of civil procedure, subject matter jurisdiction, personal 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.

**LAS 103 Legal Research /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 and WRT 101 or employment in the legal or a related field.

Principles and techniques of legal research. Includes categories of research materials, citing legal material, finding and using secondary authority, finding tools, Shepard's Citators, case law, constitutions, statutes and administrative law, analyzing research problems, and preparing research reports.

**LAS 104 Legal Assistant Ethics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 103 or concurrent enrollment.

Rules and principles of professional responsibility in the legal field. Includes sources of the rules of legal ethics, ethical guidelines and attorney supervision of legal assistants, unauthorized practice of law, confidentiality, conflicts of interest, advertising and solicitation, attorneys' fees and fiduciary duties, competence, malpractice, ethical conduct issues in litigation, and professional integrity issues.

**LAS 106 Civil and Criminal Evidence /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 103 or concurrent enrollment.

Legal assistant's role in the analysis and application of the rules of evidence. Includes relevancy and its limits, privileges, witnesses, opinion and expert testimony, hearsay, authentication, and contents of writings, recordings and photographs.

**LAS 201 Consumer Law Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101.

Legal procedures between consumers and business entities/governmental agencies. Includes consumer claims arising from the sale of merchandise, warranties, consumer rights, defective construction claims, consumer credit reports, collection practices, towing and repossession of motor vehicles, consumer rights under form contracts/contracts of adhesion, and fair housing law.

**LAS 202 Civil Litigation Procedures II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 102.

Continuation of LAS 102. Includes discovery procedures in Federal Court, disclosure procedures in Arizona Superior Court, file organization and document control, pre-trial motions and proceedings, gathering and organizing evidence, preparation of witnesses, alternative resolutions without trial, trial procedures, post-trial and appellate procedures.

**LAS 203 Tort Law Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101, 102.

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 legal assistant in tort cases.

**LAS 204 Wills, Trusts, and Estates /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 or employment in a legal related field.

Preparation to assist a lawyer in estate planning. Includes an introduction to wills, trusts and estates, intestate succession, guardianships, will related documents, will drafting and executing, estate administration, probate related legal action, trusts and administration, and fiduciary duties.

**LAS 206 Criminal Trial Procedures I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 or employment in a legal related field.

Criminal trial process from first court appearance through pre-trial procedures. Includes steps in the criminal law process, advocacy system, definition of terms, plea bargaining, ethical considerations, initial appearance, probable cause, discovery, evaluation of legal issues, pretrial motions, and Rules of Criminal Procedure - arrest through pretrial motions.

**LAS 207 Criminal Trial Procedures II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 206.

Continuation of LAS 206. Includes Rules of Criminal Procedure - trial through appeal, court and jury trial, jury trial book, motions in limine, jury selection, opening statement, direct examination, cross examination, objections, special actions, motions at close of evidence, closing argument, post-verdict procedures, and appellate procedures.

**LAS 208 Domestic Relations and Family Law /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 or employment in the legal or a related field.

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.

**LAS 209 Bankruptcy Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 or employment in the legal or a related field.

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 legal assistants' roles.

**LAS 210 Public Agency Law /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101, 102.

Laws and procedures relating to the jurisdiction and regulatory powers of governmental agencies and departments. Includes an overview of public agency law, laws and activities or benefits regulated by administrative agencies, and the role and purpose of federal, state, country, and municipal administrative agencies.

**LAS 211 Legal Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 103, 202, WRT 101.

Principles and techniques of legal writing. Includes writing style, editing and proofreading, legal analysis, legal brief types, and applications of legal writing for memorandum, litigation documents, correspondence, and transaction documents.

**LAS 212 Law Office Computerization /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 (or concurrent enrollment) and CSC 105.

Applications of computer software in the 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.

**LAS 213 Computer Assisted Legal Research /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 103 or concurrent enrollment.

Computer assisted legal research systems. Includes search techniques, dis-



play elements, database menus, special services regarding citation methods, advanced search techniques, and cost effective usage.

#### **LAS 215 Corporate Law Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 220 (or concurrent enrollment) or LAS 101 or employment in the legal or related field.

The role and responsibilities of a legal assistant regarding the procedures and document drafting necessary for incorporation and the requirements for maintaining corporate legal status. Includes incorporation and maintenance, corporate power theories and defenses, stocks, voluntary dissolution and takeovers.

#### **LAS 217 Real Estate Legal Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LAS 101 or employment in the legal field or a Real Estate License.

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/purchase agreements, escrows and closings, deeds, co-ownership, legal descriptions, leases, encumbrances, liens, and foreclosures.

#### **LAS 290 Legal Assistant Internship /4 cr. hrs./16 periods (1 lec., 15 lab)**

Prerequisite(s): WRT 101, BUS 220, LAS 104, 202, and two LAS specialty electives. A minimum of 45 credit hours if completing the AAS Degree, or 27 credit hours if completing the certificate are required. Enrollment and placement contingent upon earned grade point average in LAS courses. Application and acceptance required.

Volunteer legal assistant 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. Designed for students in their final semester of course work in the Legal Assistant Program.

## **LEGAL SECRETARY**

#### **LSY 101 Introduction to the Legal Secretary Profession /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Designed for students who wish to seek a career as a legal secretary. Includes defining the role of the legal secretary and the ethical responsibilities of the profession, how legal secretaries help enhance and facilitate the delivery of legal services, and the required skills and knowledge to function effectively as a legal secretary. Also includes identification of employment opportunities in the legal secretary profession.

#### **LSY 201 Legal Secretary Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LSY 101.

Presentation of the knowledge and skills required to function successfully as a legal secretary. Includes preparation and distribution of calendar documents, the fundamentals of filing existing and incoming documents, the preparation of tickler reminders, the management of pending files, and the essential attorney support duties required in the daily operation of a legal office. Also includes the role of personal computers, E-Mail, and other technological equipment utilized in the daily operation of a legal office.

#### **LSY 210 Legal Office Accounting and Financial Procedures /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LSY 201.

Introduction to the necessary aspects of accounting and financial procedures used in a legal office. Includes the essential requirements of working with trust accounts, the development and distribution of budget and financial statements, the fundamentals of billing, payroll preparation, and insurance. Also includes identification of the necessary ethical and confidentiality requirements connected with the accounting and financial operations of a legal office.

#### **LSY 290 Legal Secretary Field Experience /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LSY 201.

Participation in legal office placements allow students to acquire practical experiences in the legal secretarial area. Includes seminars conducted by the instructor to discuss the field experiences in relation to the students program of study. Also includes an analysis of employment and career opportunities in the profession.

## **LIBRARY SKILLS**

#### **LIB 100 Basic Library Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Introduction to basic college-level library skills. Includes defining a topic, designing a search strategy, locating information, developing a thesis and compiling a bibliography. Also includes research process, problem resolution and critical evaluation of information.

#### **LIB 298 Advanced Topics in LIB: /.25-4 cr. hrs./25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Customized instruction developed to meet library personnel needs or interests. Includes objectives and content to meet a topic of specific or timely interest. Credit may be earned for each topic taken.

**LITERATURE****LIT 085 Reading For Pleasure /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of a wide variety of popular writing in order to develop the attitudes, habits and skills which make reading enjoyable.

**LIT 120 Literary Visions /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basics of reading and writing about literature. Includes an introduction to the major genres of literature: fiction, poetry, and drama. Also includes the elements of these genres: plot and structure, character, setting, style, symbolism and myth, and theme.

**LIT 198 Major Literary Themes: /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Exploration of a variety of literary treatments of a single theme or literary type. Possible areas of study include women in literature, folklore in literature, death and dying, science fiction and mystery fiction. Emphasis on works of high literary merit.

**LIT 231 Introduction to Shakespeare /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Familiarization with a number of Shakespeare's major dramas. Includes relevant history, social conditions and literary background. Some attention is given to plays as stage vehicles.

**LIT 237 Women in Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Survey of literature by and/or about women. Includes issues concerning women in literature and the changing images of women. Also includes a literary analysis of selected writings.

**LIT 260 Major British Writers /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Representative selection of works by major authors. Includes a range of periods and types of literature.

**LIT 261 Modern Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Readings in modern fiction, drama and poetry.

**LIT 265 Major American Authors /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Survey of selected works by major American authors from the colonial period to the present.

**LIT 266 World Literature: Dramatic /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Major dramatic works of western culture. Includes literary forms, historical context, psychological and moral implications of the literature, and cultural significance of plays.

**LIT 267 World Literature: Narrative /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Great narrative works of literary tradition with emphasis on form, theme and cultural context.

**LIT 268 Introduction to the Literature of the Americas /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Major literary works and movements from Pre-Columbian America as well as the English, Spanish, French and Portuguese Americas.

**LIT 275 Ethnic Literature: /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Exploration of the experience of various ethnic groups as reflected in literature by and about them.

**LIT 284 Children's Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): College-level reading and writing skills strongly recommended.

Survey of the major genres of children's literature: child lore, fables, folk tales, poetry, tall tales, the picture book, the adolescent novel and fictional, historical and non-fictional prose.

**LIT 286 Themes in American Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Exploration of a single theme in American literature such as individualism, nature or the outsider. Includes works of major authors plus a variety of genres appropriate to the theme, including novels, drama and poetry.

**LIT 288 Politics and the Novel /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Discussion and analysis of significant political questions as seen through the eyes of various novelists.

**LIT 289 Literature and Film /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102.

Investigation of the relationship between written literature and the moving image of film and video. Includes birth of film, comparative approaches, performed drama, and critical analysis.



**MACHINE TOOL TECHNOLOGY****MAC 100 Introduction to Machine Tool /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and procedures for basic machine tool operations. Includes careers in manufacturing, machine tool history, safety, materials, manufacturing process planning, measurement, layout tools and procedures, principles of metal cutting, bench and hand tools, power saws, drill presses, and abrasive machine.

**MAC 103 Applied Shop Mathematics I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 082 or satisfactory score on mathematics assessment test.

Practical mathematics as applied to machine tool and related technologies. Includes fractions, accuracy, exponents, pocket calculators, measurement, measuring instruments, algebra, ratios and proportions, and formulas.

**MAC 104 Applied Shop Mathematics II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAC 103.

Continuation of MAC 103. Includes angles, circles, trigonometry, trigonometric applications, oblique triangles, three-dimensional figures, Cartesian coordinate system, and point-to-point programming.

**MAC 110 Machine Shop I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAC 100 or a score of 80% or better on a Machine Tool assessment test.

Introduction to basic machine shop practices. Includes safety, lathes, and milling machines.

**MAC 120 Machine Shop II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAC 110 or equivalent with department advisor approval. Continuation of MAC 110. Includes a more in depth application of safety, lathes, milling machines, and grinding machines.

**MAC 130 Fundamentals of Metallurgy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles of metallurgy. Includes structural materials, industrial concepts, properties of metals and alloys, hardness testing, science of metals, periodic table, structure of metals, nature of metals, and metallography.

**MAC 199 Co-op Related Class in MAC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**MAC 199 Co-op Work in MAC /1-8 cr. hrs./5-40 periods (5-40 lab)**

See Cooperative Education section for description.

**MAC 205 Mechanical Inspection /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAC 104, 120.

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 coordinate measuring machines.

**MAC 210 Jig and Fixture Design /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): CAD 101, MAC 104.

Design and application of tools, jigs, and fixtures for basic metal working. Includes basic types of jigs and fixtures, design economics, designing and constructing jigs and fixtures, and specialized workholding tooling.

**MAC 250 Computer Numerical Control (CNC) Mill Programming I /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): CAD 101, MAC 104, 120.

Operations and procedures for automated machining systems. Includes Numerical Control (NC) and Computer Numerical Control (CNC) machining systems, positioning and coordinate systems used in NC/CNC programming, part programming, diagnosis/correction of programming errors, program procedures.

**MAC 255 Computer Numerical Control (CNC) Mill Programming II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAC 250.

Continuation of MAC 250. Includes review of Computer Numerical Control (CNC), diagnosis and correction of programming errors, advanced programming techniques used in production and prototype machining, introduction to lathe programming, introduction to macro programming language, and introduction to Computer Aided Machining (CAM).

**MAC 257 Computer Aided Machining (CAM) I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): CAD 151, MAC 255.

Programming automated machine tools using Computer Aided Manufacturing (CAM) software. Includes review of Computer Numerical Control (CNC) and Computer Aided Drafting (CAD), introduction into SMART-CAM environment, process model geometry, set up different levels, clearances, and profile tops, insert tool box, entity creation, graphics display, entity grouping, changing, and organization, viewing the process model, transforming geometry, solid modeling, rough processing, and code generation.

**MAC 258 Computer Aided Machining (CAM) II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAC 257.

Continuation of MAC 257. Includes profile curves, creating meshes, editing meshes, and cavity roughing.

**MAC 260 Computer Numerical Control (CNC) III: Lathe /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MAC 255.

Continuation of MAC 255. Includes Computer Numerical Control (CNC) lathe applications, programming geometry, programming techniques, and production machining techniques.

**MAC 275 Applied Metallurgy /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): None.

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.

**MAC 280 Machine Shop III /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): MAC 104, 120.

Continuation of MAC 120. Includes advanced applications of safety, dimensional measurement, lathe operation, milling machine operation, and grinding machine operation.

**MAC 285 Physical Metallurgy /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MAC 130.

Behavior of materials, metals, and alloys during shaping and processing operations. Includes strengthening processes, alloying, phase diagrams, nonferrous alloys, basic steel, heat treating equipment, alloy steels, cast irons, stainless steels, process effects, and non-destructive testing.

**MAC 296 Machine Tool Independent Projects /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): Consent of instructor.

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation. May be taken sixteen times for a maximum of sixteen credit hours.

**MAC 297 Machine Tool Seminar: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Machine tool job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

## MANAGEMENT

**MAN 110 Human Relations in Business and Industry /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): None.

Organizational structure and how its functioning is affected by many human factors. Includes motivation, problem solving techniques, group process and organization environment.

**MAN 122 Supervision /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of personnel supervision. Historical development; recruitment, training and evaluation of employees; decision making; and the role of labor unions.

**MAN 124 Small Business Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis of the practical problems of organizing and managing a successful small business. Includes practical problems in quantitative analysis, causes of business failure, record keeping, sales promotion, marketing, budgeting, employee relations and small business case studies. Emphasis on the managerial activities of the entrepreneur and their application to good business practice.

**MAN 130 Quality Systems Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 092.

Contemporary quality-system philosophies. Includes methods and technical operations for quality management in product and service organizations.

**MAN 270 Computer Applications for Managers /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 105 or consent of instructor.

Development of management skills in computer applications for business. Includes maximizing computer services, history of data processing as viewed by management, advancement in reporting tools, efficient computer utilization via corporate management direction and related concerns.

**MAN 276 Human Resources /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 100.

Practical aspects of personnel management and support. Includes recruiting, selection, testing, rating systems, promotion, discipline, training, labor relations, job evaluation, and manpower planning.

**MAN 278 Labor/Management Relations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 100.

Examination of basic principles and current status of labor/management relations in the United States. History, development of American unionism, government of trade unions, collective bargaining, public policy and bargaining power. Reviews legal framework regulating labor/management relations. Emphasis on contemporary issues and problems involved in building a sound relationship between management and labor.

**MAN 280 Business Organization and Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 100 and any other MAN course.

Nature and functions of business organization and management. The role of management in business and other human endeavors; management as a total system within constraints imposed by society, government, technology and ideology; management as a practical integration of diverse philosophies.

**MAN 298 Advanced Topics in Management: /5-3 cr. hrs./5-3 periods (5-3 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics in management which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**MAN 299 Co-op Related Class in MAN /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**MAN 299 Co-op Work in MAN /3-6 cr. hrs./15-30 periods (15-30 lab)**

See Cooperative Education section for description.

**MARKETING****MKT 111 Marketing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles of moving goods and services from producer to consumer. Includes functions of marketing in relation to manufacturing, wholesaling and retailing. (Same as DES 110.)

**MKT 113 Professional Sales /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles and techniques of selling and their practical application. Includes types of customers, products, presentation of information, determination of customer's wants and needs, meeting customer objections, and opportunities in selling.

**MKT 125 Advertising /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles of the various aspects of advertising including its planning and creation.

**MKT 139 Retailing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The organization and operation of a retail store. Includes trends in the field and problems involved in the retailing of goods and services.

**MKT 150 Physical Distribution Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

In-depth study of methods of distributing goods. Physical warehousing, inventory control, materials handling, industrial packaging, order processing and location analysis. Includes managerial responsibilities and recent transportation regulation actions. (Same as PIM 150.)

**MKT 160 Marketing for Nonprofit Organizations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Applies marketing principles to agencies other than for profit business and industry. Use of case studies and discussions. Each student will prepare an integrated marketing plan for a nonprofit organization.

**MKT 299 Co-op Related Class in MKT /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**MKT 299 Co-op Work in MKT /3-6 cr. hrs./15-30 periods (15-30 lab)**

See Cooperative Education section for description.

**MATHEMATICS**

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. A satisfactory assessment test score may be requested in lieu of, or in addition to, the listed prerequisites for any course.

Students who have earned credit in any college mathematics course equivalent to or above MAT 082 will not receive credit for MAT 082 or any of its components without permission of the Mathematics Department Chair.

**MAT 050 Approaching Mathematics Positively /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Designed for students who avoid taking mathematics courses or who have anxiety in mathematics courses. Includes defining mathematics anxiety, underlying causes, and practicing anxiety reduction techniques. Also includes mathematics study and test-taking. (Same as HDE 050.)

**MAT 065 Health Careers Mathematics /3 cr. hrs./3 periods (3 lec.)**

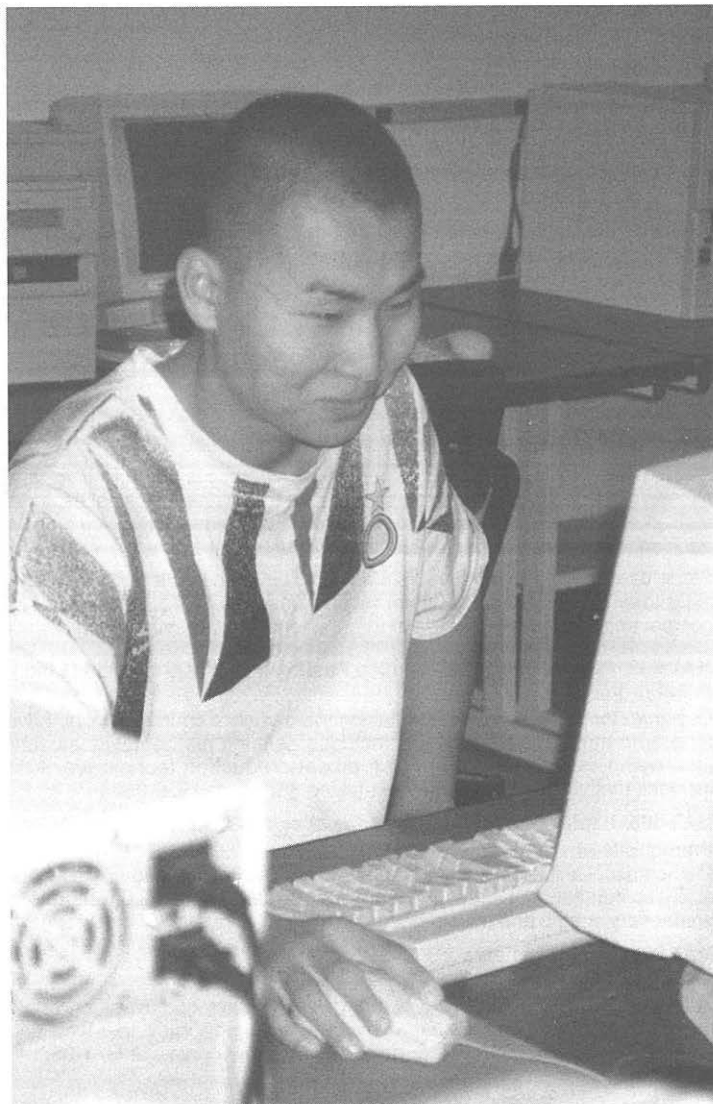
Prerequisite(s): None.

Mathematical skills for nursing and chemistry. Includes fractions, decimals, scientific notation, dosages, concentrations, logarithms and conversions in apothecary, metric and household measures.

**MAT 082 Basic Mathematics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Fundamentals and applications of arithmetic. Includes operations on whole numbers, fractions, decimal numbers, ratio and proportion, percent, and measurement. MAT 082A, 082B, and 082C together constitute MAT 082.



**MAT 082A Basic Mathematics - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Module A constitutes approximately the first one-third of MAT 082.

**MAT 082B Basic Mathematics - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 082A or concurrent enrollment.

Module B constitutes approximately the second one-third of MAT 082.

**MAT 082C Basic Mathematics - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 082B or concurrent enrollment.

Module C constitutes approximately the third one-third of MAT 082.

**MAT 086 Prealgebra /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 082 or satisfactory score on the mathematics assessment test.

Transition from arithmetic to algebra. Includes signed numbers, order of operations, polynomials, fractions, linear equations, area and perimeter, decimals, percents, and ratio and proportion. MAT 086A, 086B, and 086C together constitute MAT 086.

**MAT 086A Prealgebra: Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 082 or satisfactory score on the mathematics assessment test.

Module A constitutes approximately the first one-third of MAT 086.

**MAT 086B Prealgebra: Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086A.

Module B constitutes approximately the second one-third of MAT 086.

**MAT 086C Prealgebra: Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086B.

Module C constitutes approximately the third one-third of MAT 086.

**MAT 092 Elementary Algebra /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the mathematics assessment test.

Introduction to basic algebra. Includes the real number system, algebraic expressions, linear equations and inequalities, integer exponents, polynomials, simple rational expressions, and square roots. MAT 092A, 092B, and 092C together constitute MAT 092.

**MAT 092A Elementary Algebra - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the mathematics assessment test.

Module A constitutes approximately the first one-third of MAT 092.

**MAT 092B Elementary Algebra - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 092A or concurrent enrollment.

Module B constitutes approximately the second one-third of MAT 092.

**MAT 092C Elementary Algebra - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 092B or concurrent enrollment.

Module C constitutes approximately the third one-third of MAT 092.

**MAT 108 Practical Geometry /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the assessment test.

Fundamentals of practical geometry. Includes basic geometric properties of lines, angles and triangles, computations of perimeter, area and volume, and practical applications involving polygons, circles, and solids.

**MAT 110 Technical Mathematics I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the mathematics assessment test.

Technical arithmetic and geometry. Includes a review of arithmetic operations, percent, measurements, basic geometry involving perimeters, areas and volumes, basic algebraic operations, linear equations and factoring, algebraic fractions, graphs of equations, and systems of linear equations. MAT 110A, 110B, and 110C together constitute MAT 110.

**MAT 110A Technical Mathematics I - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the mathematics assessment test.

Module A constitutes approximately the first one-third of MAT 110.

**MAT 110B Technical Mathematics I - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 110A or concurrent enrollment.

Module B constitutes approximately the second one-third of MAT 110.

**MAT 110C Technical Mathematics I - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 110B or concurrent enrollment.

Module C constitutes approximately the third one-third of MAT 110.

**MAT 111 Technical Mathematics II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 110.

Continuation of MAT 110. Includes a review of graphing, scientific notation, roots, radicals and quadratic equations. Also includes trigonometric functions, vectors, and solutions of right and oblique triangle problems. MAT 111A, 111B, and 111C together constitute MAT 111.

**MAT 111A Technical Mathematics II - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 110 or concurrent enrollment in MAT 110C.

Module A constitutes approximately the first one-third of MAT 111.

**MAT 111B Technical Mathematics II - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 111A or concurrent enrollment.

Module B constitutes approximately the second one-third of MAT 111.

**MAT 111C Technical Mathematics II - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 111B or concurrent enrollment.

Module C constitutes approximately the third one-third of MAT 111.

**MAT 112 Elementary Trigonometry /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the mathematics assessment test.

Fundamentals of triangle trigonometry. Includes geometry, trigonometric functions, and applications.

**MAT 113 Mathematics with Trigonometry and Statistics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 122 or TEC 112 or satisfactory score on the mathematics assessment test.

Non-linear and simultaneous equations used in network analysis. Includes basic trigonometry and complex numbers used in AC circuit theory and optics, waveforms and methods of description, basic probability and statistics used in statistical process control and metrology, introductory periodic waveform analysis, and graphical presentations of special sums and rates of change in linear circuit applications. (Same as TEC 113.)

**MAT 114 Elementary Data Analysis and Statistical Inference /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 086 or satisfactory score on the mathematics assessment test.

Introduction to statistics. Includes the collection and presentation of data and statistical measures.

**MAT 122 Intermediate Algebra /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 092 or satisfactory score on the math assessment test.

Basic algebraic functions. Includes the language of sets, lines in the plane, systems of linear equations, rational expressions and equations, radical expressions and equations, quadratics, exponents, and logarithms. MAT 122A, 122B, and 122C together constitute MAT 122.

**MAT 122A Intermediate Algebra - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 092 or concurrent enrollment in MAT 092C or satisfactory score on the mathematics assessment test.

Module A constitutes approximately the first one-third of MAT 122.

**MAT 122B Intermediate Algebra - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 122A or concurrent enrollment.

Module B constitutes approximately the second one-third of MAT 122.

**MAT 122C Intermediate Algebra - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 122B or concurrent enrollment.

Module C constitutes approximately the third one-third of MAT 122.

**MAT 142 Topics in College Mathematics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 122 or satisfactory score on the math assessment test.

Survey of mathematical topics and applications. Includes application of mathematics to the social services, management science, growth, and probability and statistics.



**MAT 151 College Algebra /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): MAT 122 or satisfactory score on the mathematics assessment test.

Introduction to college-level algebra. Includes equations, functions, systems of equations, exponential and logarithmic functions, graphing of higher order polynomial and rational functions, sequences and series, and calculator use. MAT 151A, 151B, 151C, and 151D together constitute MAT 151.

**MAT 151A College Algebra - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 122 or satisfactory score on the mathematics assessment test.

Module A constitutes approximately the first one-fourth of MAT 151.

**MAT 151B College Algebra - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 151A.

Module B constitutes approximately the second one-fourth of MAT 151.

**MAT 151C College Algebra - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 151B.

Module C constitutes approximately the third one-fourth of MAT 151.

**MAT 151D College Algebra - Module D /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 151C.

Module D constitutes approximately the fourth one-fourth of MAT 151.

**MAT 167 Introductory Statistics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 151 or satisfactory score on the mathematics assessment test.

Introduction to statistics. Includes sampling; data display; measures of central tendency, variability, and position; random variables; probability; probability distributions; confidence intervals; hypothesis testing; and regression.

**MAT 172 Finite Mathematics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 151.

Mathematics for students majoring in business. Includes set theory, partitions, permutations, combinations, probability, Bernoulli trials, Markov chains and the simplex method of linear programming.

**MAT 182 Trigonometry /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 151 or concurrent enrollment.

Introduction to trigonometric functions. Includes graphs, identities, angle measure, vectors, polar coordinates, and conic sections. MAT 182A, 182B, and 182C together constitute MAT 182.

**MAT 182A Trigonometry - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 151 or concurrent enrollment.

Module A constitutes approximately the first one-third of MAT 182.

**MAT 182B Trigonometry - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 182A or concurrent enrollment.

Module B constitutes approximately the second one-third of MAT 182.

**MAT 182C Trigonometry - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): MAT 182B or concurrent enrollment.

Module C constitutes approximately the third one-third of MAT 182.

**MAT 187 Precalculus /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): MAT 122 or satisfactory score on the mathematics assessment test.

College-level algebra and trigonometry. Includes topics covered in MAT 151 and 182. Recommended for students planning to take analytic geometry and calculus. For P.C.C. degree, credit is allowed for MAT 151 and 182, or MAT 187, but not for all three.

**MAT 198 Special Topics in Mathematics: /1-4 cr. hrs./1-10 periods (1-4 lec., 0-9 lab)**

Prerequisite(s): Consent of instructor.

Introduction to the techniques of research in mathematics. Includes topics concerned with procedures, experimental design, and current research.

**MAT 212 Topics in Calculus /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 151.

Calculus for students majoring in business. Includes limits, continuity, differentiation and integration of algebraic functions.

**MAT 220 Calculus I /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): MAT 182 or 187 or satisfactory score on the mathematics assessment test.

Introduction to analytical geometry and calculus. Includes limits, continuity, differentiation and integration of algebraic and basic trigonometric functions, and applications of differentiation and integration.

**MAT 227 Discrete Mathematics in Computer Science /3-4 cr. hrs./3-4 periods (3-4 lec.)**

Prerequisite(s): MAT 151.

Mathematical concepts applicable to course work in computer science. Includes logic, sets, proof techniques, induction, graphs, formal languages, and basic application of discrete mathematics to computer science. Basic applications of discrete mathematics are omitted for the three-credit class.

**MAT 231 Calculus II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): MAT 220.

Continuation of MAT 220. Includes differentiation and integration of logarithmic and exponential functions, techniques and applications of integration and infinite series.



**MAT 241 Calculus III /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): MAT 231.

Continuation of MAT 231. Includes conic sections, polar coordinates, solid geometry, two and three dimensional vectors, moments, partial derivatives and multiple integration.

**MAT 252 Introduction to Linear Algebra /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 231 and consent of instructor, or MAT 241.

Introduction to vector spaces and linear transformations. Includes matrices, Gaussian Elimination, Gram-Schmidt process, eigenvalues, and eigenvectors.

**MAT 262 Differential Equations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 231.

Introduction to differential equations. Includes differential equations of the first order with exact solutions, numerical approximations and systems, explicit methods for solving equations of higher order including series and Laplace transforms, and physical applications of first and second order differential equations.

**MAT 295 Independent Research in Mathematics /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): Consent of instructor.

Experience in mathematical research. Specific content to be determined by student and instructor. May be taken three times for a maximum of twelve credit hours.

**MEDIA COMMUNICATIONS**

**MEC 101 Introduction to Reporting and Media Writing /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): Writing 100 or satisfactory score on the writing assessment test.

Introduction to news reporting. Includes evaluation of news, news gathering methods, writing leads, organization of stories, interviewing and writing various types of news stories. Also includes a considerable amount of writing using computers.

**MEC 102 Survey of Media Communications /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of theory, nature, function, and impact of today's mass media. Includes a review and evaluation of important journalists' work and of various media and auxiliary industries, such as book and magazine publishing, newspapers, radio, television, film, recordings, advertising and public relations. Also includes an overview of related career options.

**MEC 110 Introduction to Public Relations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 101 recommended.

Introduction to public relations. Includes principles, practices, theory, ethics and law, and techniques for defining and dealing with internal and external publics. Also includes writing, message dissemination, development of media networks, and media relations, organizing special events and news conferences, research for planning and evaluation, and group projects to develop and evaluate a public relations plan.

**MEC 124 Writing for Film and Television /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 102 or concurrent enrollment.

Screenwriting for students who are interested in writing a screenplay. Includes screenplay narrative, plots, story structure, conflict, writing dialogue, techniques of developing a character, purpose of script form, and relationships between the writer and director. Also includes writing a feature script, potential markets, and the realities of selling your script.

**MEC 125 Beginning Video Production /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MEC 124.

Principles and techniques of video production. Includes operation and application of all the basic tools, equipment, and techniques used in television production. Also includes practical experience as part of a production team. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 127 Sound Production for Radio /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MEC 102, 124.

Methods and techniques of the operation of radio broadcasting equipment. Includes use of studio microphones, audio control consoles, audio type cartridge machines, audio tape standard recorders and optical disk machines. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 174 Business of Audio /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MEC 102, 124.

Economic, legal and financial aspects of the music and recording industry. Covers current markets for music videos, compact disks, and DAT technologies. Also examines recording companies and artists, music writers and publishers, copyright laws, and general music/audio industry concerns.

**MEC 175 Cinematography /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MEC 124 or concurrent enrollment.

Basic techniques of motion picture production. Includes camera operation, animation application, film editing, and motion picture lab processes. Also includes the creation and production of super 8 films. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 176 Film Animation /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Introduction to film animation techniques. Includes the organization of various creative arts in the production of an animated film with an emphasis on the individual's use of animation as a means of personal expression. Also includes an historical overview of animation, storyboard technique, developing story structure, translating concepts into visual terms, character design, backgrounds, layout drawings, animation techniques, development of preproduction sound elements, and the integration of these elements aimed towards the production of a complete sound animation film. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 177 Location Sound for Film and Video /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): MEC 102, 124.

Theory and practice of sound recording on location for feature films, documentaries, video productions, and multimedia. Includes hands-on experience with sync sound recording, time code, microphone applications and problem-solving on location. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 180 Newspaper Business Procedures /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles and practice of newspaper advertising, sales, circulation, record keeping and accounting.

**MEC 187 Introduction to Electronic Publishing in Journalism/Media / 3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MEC 101 and computer literacy.

Introduction to electronic (on-line) publishing with applications to new media. Includes work with computers, desktop publishing, imaging and Internet software, html formatting, and designing Web pages/sites to create camera-ready publications and maintain a Web site. Also includes methods to navigate and do research on the Internet and the World Wide Web, concepts, principles and ethics of publishing on the Internet, responsibilities of an electronic journalist, disinformation and privacy issues. Basic word processing skills and computer literacy are recommended.

**MEC 188 Desktop Publishing for Journalism and Media Communication /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): Word processing or keyboard skills recommended.

Desktop publishing for media communications. Includes basic principles of page layout using text and graphics applied to journalistic and electronic media. Also includes designing and editing tabloid newspapers, brochures, newsletters, storyboards, slide presentations, and transparencies.

**MEC 189 Newspaper Graphics /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Principles/techniques of basic newspaper art work, typography and photography.

**MEC 193 Journalism Workshop /3 cr. hrs./9 periods (9 lab)**

Prerequisite(s): MEC 101.

Laboratory course in which students produce the college's weekly student newspaper. Includes news gathering, writing, editing, photography, advertising and other publication activities.

**MEC 196 Independent Studies in Media /1-4 cr. hrs./3-12 periods (6 lec., 6 lab)**

Prerequisite(s): Six credit hours of MEC classes and consent of instructor. Students independently continue their development in media communications with the help of a faculty member. May be taken three times for a maximum of twelve credit hours.

**MEC 198 Special Topics in Media: /1-4 cr. hrs./1-4 periods (1-4 lec.)**

Prerequisite(s): Consent of instructor.

Special topics in media which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**MEC 199 Co-op Related Class in MEC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**MEC 199 Co-op Work in MEC /1-3 cr. hrs./5-15 periods (5-15 lab)**

See Cooperative Education section for description.

**MEC 211 Lighting for Film and Video /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MEC 124, and MEC 125 or 175.

Creative lighting techniques, practices, and use of equipment. Includes lighting theory, color theory, and technical and artistic lighting methods used in feature film, commercials, and video production. Also includes working as part of a film or video lighting production team. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 215 Advanced Cinematography /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MEC 175.

Tools, techniques, and procedures involved in professional film production. Includes the film proposal, script breakdown, pre-production and post-production of one 16 mm film, and laboratory experience with film production equipment. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 216 Post Production for Film /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): MEC 215.

Introduction to film post production video and audio techniques and aesthetics of film editing. Includes step-by-step editing room procedures leading to final screening. Also includes logging, storing, retrieving footage, synchronizing dailies, selecting takes, editing of dialogue and sound effects, final mixing, and color timing. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 225 Advanced Video Production /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MEC 125.

Production of a variety of television programs. Includes the utilization of television equipment in remote and on-location sites as well as in studio operation. Also includes the production of special programs for the arts, education, and industry. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 230 Advanced Reporting /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 101.

Advanced news writing and related activities. Includes investigative reporting, feature and editorial writing, copy-editing, headline writing, make-up and advertising. A required course for journalism majors.

**MEC 235 Broadcast Journalism /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 101.

Survey of radio and television journalism. Includes broadcast news media, electronic journalism and the broadcast news process. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 240 Editing, Layout, and Design /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): MEC 101.

Principles and techniques of publication editing, layout, and design. Includes newsroom and other settings, copy and electronic editing, proofreading, headline writing, electronic page layout, typography and design, copyflow, and problems and responsibilities of editors. Also involves the extensive use of computers in the editing process.

**MEC 260 Magazine and Feature Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 101.

Writing magazine and newspaper feature articles for publication. Each student is required to research, write and attempt to market an article or series of features.

**MEC 270 Media Advertising and Public Relations /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MEC 101.

Principles and techniques of media advertising and public relations. Includes planning, sales and production. Also includes working in groups to produce a national and local advertising campaign and a public relations campaign.

**MEC 271 Film/Video Production Financing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 124.

Strategies of production financing for independent film/video projects. Includes positioning media projects in the marketplace, writing fundable proposals, and identifying funding sources. Also includes developing a prospectus for a media project.

**MEC 275 Basic Audio Production /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MEC 124.

Fundamental tools, techniques, and procedures for multitrack recording. Includes application to film, television, radio, and the recording industry. Also includes using multi-track recording and mixing techniques to produce original production soundtracks. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 276 Advanced Audio Production /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MEC 275.

Production of audio for film, television, radio, and the recording industry. Includes utilization of professional audio equipment on location as well as in studio operation. Also includes post-production of audio for film and video, and audio production for special problems in the arts, education, and industry. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 280 Photojournalism /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): MEC 101.

Reporting and interpreting news through pictures. Includes application of basic photography techniques to mass media, analysis of photographs, some layout, and writing cutlines and captions. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 281 News and Feature Program Production /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MEC 225.

Techniques and procedures involved in producing television news feature programs for cablecasting or broadcasting. Includes procedures, cameras, lenses, audio, and graphics for in-field productions. Also includes lighting, visual expression, producing, directing, interviewing techniques, and the completion of three, thirty-minute news/feature video programs for cablecasting. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 285 Documentary Television and Film Production /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): MEC 215, 225.

Fundamentals of nonfiction film/video production. Includes script writing, research techniques, camera, lenses, audio approach, recording techniques, working methods, and production problems. Also includes the production of a television documentary. This course will require additional fees for supplies in addition to course and lab fees.

**MEC 295 Applied Photojournalism /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Practical application of photojournalistic techniques. Includes news value, pictorial quality, handling assignments and the picture story.

**MEC 296 Advanced Independent Studies in Media /1-4 cr. hrs./ 3-12 periods (6 lec., 6 lab)**

Prerequisite(s): 12 credit hours of MEC courses, completion of MEC 196 and consent of instructor.

Students independently continue their development in media communications with the help of a faculty member. May be taken three times for a maximum of twelve credit hours.

**MEC 299 Co-op Related Class in MEC /1 cr. hr./1 period (1 lec.)**

See Cooperative Education section for description.

**MEC 299 Co-op Work in MEC /1-3 cr. hrs./5-15 periods (5-15 lab)**

See Cooperative Education section for description.

## MUSIC

**MUS 020 Evening Wind Ensemble /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Students chosen by audition.

Advanced performances of instrumental music. Focuses on reading and interpreting band literature. May be taken eight times for a maximum of sixteen credit hours.

**MUS 027 Introduction to Ear Training /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Ear training for individuals with little or no musical background. Includes learning to perform what is written and identify what is heard through simple melodies and rhythms. Students considering music as a major are encouraged to take MUS 027 and 102 concurrently.

**MUS 041 Introduction to Piano I /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Basic principles and techniques of piano playing in a group situation. Includes reading musical notation, practicing techniques, and learning basic theoretical concepts.

**MUS 042 Introduction to Piano II /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Continuation of MUS 041. Expansion and refinement of piano playing techniques. Designed for non-music majors.

**MUS 050 Rhythmic Performance /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis and performance of rhythmic notation. Emphasis on rhythmic reading skills, terminology, group performance and notation.

**MUS 054 Introductory Jazz Improvisation /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): By audition.

Basic principles and techniques of jazz improvisation. Enrollment determined by audition with instructor. May be taken six times for a maximum of twelve credit hours.

**MUS 061 Applied Music-Private Instruction - Brass (Non Major) /2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 062 Applied Music-Private Instruction - Guitar (Non Major) /2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 063 Applied Music-Private Instruction - Percussion (Non Major) /2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 064 Applied Music-Private Instruction - Piano (Non Major) /2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 065 Applied Music-Private Instruction - Strings (Non Major) /2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 066 Applied Music-Private Instruction - Voice (Non Major) /2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 067 Applied Music-Private Instruction - Woodwinds (Non Major) / 2 cr. hrs./5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 068 Applied Music-Private Instruction (Non Major) /0 cr. hrs./ .5 periods (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Course of study jointly determined by the instructor and student. Development of performance skills is stressed. May be taken four times for a maximum of eight credit hours.

**MUS 089 Contemporary Guitar Styles /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Basic training in the essential elements of a variety of popular American guitar styles. Includes folk, country/western, blues, rock, and jazz. Also includes rhythm accompaniment, improvising solos, fretboard theory/harmony, memorization, and tablature reading.

**MUS 100 Guitar I /2 cr. hr./2 periods (2 lec.)**

Prerequisite(s): None.

Development of the principles of guitar playing with emphasis on a variety of styles and guitar repertoire.

**MUS 101 Guitar II /2 cr. hr./2 periods (2 lec.)**

Prerequisite(s): MUS 100 or consent of instructor.

Continuation of MUS 100 with more detailed development of guitar skills including basic musicianship, sight-reading, repertoire development, ensemble playing and improvisation.

**MUS 102 Introduction to Music Theory /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to fundamentals of music designed to develop basic literacy in music. Includes study of notation, melody, harmony, rhythm and musical terminology. It is recommended that students who are thinking of pursuing music as a major take MUS 027 and 102 concurrently.

**MUS 108 Pima Jazz Band I /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Enrollment by audition.

Rehearsal and performance of many styles of music in the jazz idiom. Includes progressive development of musical skills through interpretation of literature. May be taken four times for a maximum of four credit hours.

**MUS 109 Pima Jazz Band II /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Enrollment by audition.

Continuation of MUS 108. Includes continued emphasis on progressive development of musical skills through interpretation of literature. May be taken four times for a maximum of four credit hours.

**MUS 111 Exploring Music Through Piano /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Keyboard application skills and music fundamentals. Includes beginning improvisation, playing by ear, harmonizing melodies, music reading, and repertory pieces. Also includes aural application to music regarding form, style, and structure.

**MUS 112 Community Jazz Band I /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Enrollment by audition.

Rehearsal and performance of many styles of music in the jazz idiom. Includes progressive development of musical skills through interpretation of professional literature. Members selected primarily from Tucson's adult community. May be taken four times for a maximum of four credit hours.

**MUS 113 Community Jazz Band II /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Enrollment by audition.

Continuation of MUS 112. Includes continued emphasis on progressive development of musical skills through interpretation of professional literature. Membership selected primarily from Tucson's adult community. May be taken four times for a maximum of four credit hours.

**MUS 116 Philharmonia Orchestra I /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Enrollment by audition.

Progressive development of musical skills through interpretation of orchestral literature. Includes participation in regular rehearsals and performances. May be taken eight times for a maximum of eight credit hours.

**MUS 117 Philharmonia Orchestra II /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): Enrollment by audition.

Continuation of MUS 116. Includes participation in regular rehearsals and performances. May be taken eight times for a maximum of eight credit hours.

**MUS 120 Concert Band I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Enrollment by audition.

Progressive development of musical skills through interpretation of literature. Includes participation in regular rehearsals and performances. May be taken six times for a maximum of eighteen credit hours.

**MUS 121 Concert Band II /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Enrollment by audition.

Continuation of MUS 120. Includes participation in regular rehearsals and performances. May be taken six times for a maximum of eighteen credit hours.

**MUS 125 The Structure of Music I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic structures of music and fundamental musical terminology. Includes scales, intervals, keys, chords, notation, tonality, form and part writing. It is recommended that students who are music majors take MUS 125 and 127 concurrently.



**MUS 126 The Structure of Music II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MUS 125.

Structure and terminology of modal and contrapuntal music. Includes modal harmony, non-western music, analysis and 18th century counterpoint.

**MUS 127 Aural Perception I /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Co-requisite(s): It is recommended that students who are music majors take MUS 125 and 127 concurrently.

Development of aural techniques through dictation and performance of intervals and melodic and simple rhythmic structures. Also includes general techniques of listening to music.

**MUS 128 Aural Perception II /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MUS 127.

Continuation of MUS 127. Includes analysis, dictation, sight-singing, and developing perception of melodic structures, and forms.

**MUS 130 Chorale (SATB) /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Enrollment by audition.

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. May be taken six times for a maximum of eighteen credit hours.

**MUS 131 College Singers (SATB) /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Enrollment by audition.

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. May be taken six times for a maximum of eighteen credit hours.

**MUS 134 Vocal Ensemble /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): Students chosen by audition.

Rehearsal and performance of literature for various combinations of voices. Emphasis on progressive development of musical skills through interpretation of literature. May be taken four times for a maximum of four credit hours.

**MUS 136 Voice Class I /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Practical training in basic skills and singing without specialization. Includes breathing, diction, tone, and rhythm.

**MUS 137 Voice Class II /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): MUS 136.

Continuation of MUS 136. Includes practical training in basic skills and singing without specialization. Also includes breathing, diction and interpretation of song literature.

**MUS 141 Piano Class I /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): None.

Beginning instruction employing group and individual techniques in an electronic lab situation. Includes introduction and development of elements of basic musicianship, keyboard skills, and learning techniques for music majors.

**MUS 142 Piano Class II /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MUS 141.

Continuation of MUS 141. Incorporates intermediate piano instruction of group and individual practice in an electronic lab. Focuses on more advanced theoretical and technical applications to the piano, including chord progressions, harmonizations, sight-reading and repertoire.

**MUS 143 Piano Class III /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MUS 142.

Continuation of MUS 142. Incorporates advanced intermediate piano instruction utilizing group and individual practice in an electronic lab. Focuses on further study of theoretical and applied techniques at the piano.

**MUS 144 Piano Class IV /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MUS 143.

Continuation of MUS 143. Incorporates advanced piano instruction utilizing group and individual practice in an electronic lab. Focuses on advanced application of theory and technique, including scales, arpeggios, harmonizations, transpositions and an in-depth study of repertoire and style. Also includes development of learning, memorization, and performance skills.

**MUS 147 Singing/Movement for the Stage /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

Basics of singing in the context of movement on the stage. Includes familiarity with the stage and the movements that work best for the performer, how to get on and off stage as yourself or as a character, how to approach a characterization, how to make your body work for you, and how to move with or against the music. Also includes live accompaniment. Singing skill is required. May be taken four times for a maximum of eight credit hours.

**MUS 148 Musical Theater Workshop /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Movement and singing to enhance projection and communication capabilities. Includes auditioning techniques, live accompaniment, and exploring the musical theater as a way to communicate. May be taken four times for a maximum of eight credit hours.

**MUS 149 Opera Workshop /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): Students chosen by audition.

Introduction to the techniques of opera. Includes stage movement, character development, and acting. Also includes arias, duets, ensembles, and auditioning techniques. May be taken four times for a maximum of twelve credit hours.



**MUS 151 Exploring Music /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to various musical styles with emphasis on listening and application of the basic elements of music (melody, rhythm, harmony, form and timbre) to each style.

**MUS 154 Jazz Improvisation /2 cr. hr./2 periods (2 lec.)**

Prerequisite(s): MUS 102 or audition.

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. May be taken six times for a maximum of twelve credit hours.

**MUS 160 Popular Music in America /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study of the history of popular music culture in America beginning with the foundations of music in colonial America through current trends in today's society. Includes ragtime, blues, jazz, country, Broadway musical, folk, and rock.

**MUS 161 Applied Music-Private Instruction - Brass I (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 162 Applied Music-Private Instruction - Guitar I (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 163 Applied Music-Private Instruction - Percussion I (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 164 Applied Music-Private Instruction - Piano I (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 165 Applied Music-Private Instruction - Strings I (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 166 Applied Music-Private Instruction - Voice I (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 167 Applied Music-Private Instruction - Woodwinds I (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 168 Applied Music-Private Instruction I (Major) /0 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): None.

Private weekly lessons. Includes participation in student recitals and jury exams. Students chosen by audition.

**MUS 171 Applied Music-Private Instruction - Brass II (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 161.

Continuation of MUS 161. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 172 Applied Music-Private Instruction - Guitar II (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 162.

Continuation of MUS 162. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 173 Applied Music-Private Instruction - Percussion II (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 163.

Continuation of MUS 163. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 174 Applied Music-Private Instruction - Piano II (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 164.

Continuation of MUS 164. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 175 Applied Music-Private Instruction - Strings II (Major) / 2 cr. hrs. / .5 period (.5 lec.)**

Prerequisite(s): MUS 165.

Continuation of MUS 165. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 176 Applied Music-Private Instruction - Voice II (Major) / 2 cr. hrs. / .5 period (.5 lec.)**

Prerequisite(s): MUS 166.

Continuation of MUS 166. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 177 Applied Music-Private Instruction - Woodwinds II (Major) / 2 cr. hrs. / .5 period (.5 lec.)**

Prerequisite(s): MUS 167.

Continuation of MUS 167. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 178 Applied Music-Private Instruction II (Major) / 0 cr. hrs. / .5 period (.5 lec.)**

Prerequisite(s): MUS 168.

Continuation of MUS 168. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 198 Special Topics in Music: /1-3 cr. hrs./1-3 periods (1-3 lec.)**

Prerequisite(s): None.

Special topics in music which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**MUS 201 History and Literature of Music I / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MUS 102.

Music literature from the ancient Greek period through the Baroque with emphasis on specific works as representative of musical evolution.

**MUS 202 History and Literature of Music II / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MUS 102.

Music literature from the end of the Baroque period through the present day with emphasis on specific works as representative of musical evolution.

**MUS 207 Music Composition / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Development of compositional skills. Includes techniques, notation, and twentieth-century models. Also includes problems of orchestration and the practice of writing music.

**MUS 225 The Structure of Music III / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MUS 125.

Chromatic harmony, melody and associated contrapuntal and rhythmic structure. Includes Schenkerian analysis, advanced tertian harmonies, chromatic modulation and in-depth analysis of selected works.

**MUS 226 The Structure of Music IV / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MUS 125.

Twentieth century musical structure. Includes analysis of and composition with atonality, serialism, polymodality, polymeter, microtones, improvisation, chance, instrument exploration, new harmonic structures, new scales and new aesthetics.

**MUS 227 Aural Perception III / 1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MUS 127.

Continuation of MUS 128. Development of aural techniques through dictation and performance of tonal and atonal melodies, chord progressions and rhythmic structures. Includes general techniques of listening to music. Required of all music majors.

**MUS 228 Aural Perception IV / 1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MUS 127.

Continuation of MUS 227. Development of aural techniques through dictation and performance of tonal and atonal melodies, chord progressions and rhythmic structures. Emphasis on 20th century musical contexts. Required of all music majors.

**MUS 261 Applied Music-Private Instruction - Brass III (Major) / 2 cr. hrs. / .5 period (.5 lec.)**

Prerequisite(s): MUS 171.

Continuation of MUS 171. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 262 Applied Music-Private Instruction - Guitar III (Major) / 2 cr. hrs. / .5 period (.5 lec.)**

Prerequisite(s): MUS 172.

Continuation of MUS 172. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 263 Applied Music-Private Instruction - Percussion III (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 173.

Continuation of MUS 173. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 264 Applied Music-Private Instruction - Piano III (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 174.

Continuation of MUS 174. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 265 Applied Music-Private Instruction - Strings III (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 175.

Continuation of MUS 175. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 266 Applied Music-Private Instruction - Voice III (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 176.

Continuation of MUS 176. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 267 Applied Music-Private Instruction - Woodwinds III (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 177.

Continuation of MUS 177. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 268 Applied Music-Private Instruction III (Major) /0 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 178.

Continuation of MUS 178. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 271 Applied Music-Private Instruction - Brass IV (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 261.

Continuation of MUS 261. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 272 Applied Music-Private Instruction - Guitar IV (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 262.

Continuation of MUS 262. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 273 Applied Music-Private Instruction - Percussion IV (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 263.

Continuation of MUS 263. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 274 Applied Music-Private Instruction - Piano IV (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 264.

Continuation of MUS 264. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 275 Applied Music-Private Instruction - Strings IV (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 265.

Continuation of MUS 265. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 276 Applied Music-Private Instruction - Voice IV (Major) /2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 266.

Continuation of MUS 266. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 277 Applied Music-Private Instruction - Woodwinds IV (Major) / 2 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 267.

Continuation of MUS 267. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 278 Applied Music-Private Instruction IV (Major) /0 cr. hrs./ .5 period (.5 lec.)**

Prerequisite(s): MUS 268.

Continuation of MUS 268. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

**MUS 296 Independent Studies in Music /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): MUS 102.

Composition and/or in-depth study in an area of the student's choice with approval by the supervising instructor. May be taken four times for a maximum of four credit hours.

**NURSING****NRS 096 Basic Independent Study in Nursing /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Consent of instructor.

Basic level independent readings or special projects. Content to be determined by conference between student and instructor.

**NRS 101 Nursing Process I for PN /8 cr. hrs./16 periods (4 lec., 12 lab)**

Prerequisite(s): Admission granted by the Allied Health Services Selection Committee.

Introduces the nursing process as a systematic approach to decision making in nursing. Includes content related to maintenance of homeostasis and role of adaptation through meeting basic needs. Introduces concepts of communication, pharmacology, growth and development with emphasis on aging. Presents laboratory and clinical application of selected nursing skills to adults. Emphasis is on the role of the practical nurse in relationship to the nursing process.

**NRS 102 Nursing Process II for PN /9 cr. hrs./19 periods (4 lec., 15 lab)**

Prerequisite(s): NRS 101.

Continues the application of the nursing process to basic care of medical/surgical clients and families in the maternity cycle and health of children. Includes emphasis on growth and development through the life cycle. Presents laboratory and clinical application of selected nursing skills to the care of adults and children. Emphasis is on the role of the practical nurse in relationship to the nursing process.

**NRS 103 Trends and Issues I /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): NRS 101 or 104.

Co-requisite(s): Concurrent enrollment in NRS 102 or 105.

Nonclinical course introducing the history and the legal and ethical issues related to practical nursing. Includes the types of programs currently producing nurses and issues related to articulation, scope of practice, licensure and current health care. Also includes leadership and management skills needed by the new graduate.

**NRS 104 Nursing Process I for ADN /8 cr. hrs./16 periods (4 lec., 12 lab)**

Prerequisite(s): Acceptance into the Nursing Program, HCA 102.

Co-Requisite: Concurrent enrollment in BIO 202, HCA 155 and WRT 101.

Introduction to the application of the nursing process and to the concepts of nurse, health, client, and environment, with emphasis on caring for adult and elderly clients. Includes the roles of the nurse as communicator, care provider, care manager, teacher and member of the nursing profession. Also includes college and clinical laboratory application of selected nursing skills and knowledge in acute care, long term care, and community settings.

**NRS 105 Nursing Process II for ADN /8 cr. hrs./16 periods (4 lec., 12 lab)**

Prerequisite(s): NRS 104, BIO 202, HCA 102, 155, WRT 101 and concurrent enrollment in BIO 205, ECE 117 and FSN 154.

Continuation of NRS 104. Application of the nursing process and expansion on the concepts of nurse, health, client and environment, with emphasis on caring for adult clients, and on the roles of the nurse as communicator, care provider, care manager, teacher and member of the nursing profession. Includes a focus on adult clients experiencing common health alterations. Also includes additional college and clinical laboratory application of selected nursing skills and knowledge in acute care and community settings.

**NRS 106 Pharmacology for Associate Degree Nursing /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): NRS 104.

Co-requisite(s): Concurrent enrollment in NRS 105.

Application of the nursing process to medication categories, uses, and effects for Associate Degree Nursing students. Includes classifications, actions, uses, contraindications, doses, routes of administration, side effects, interactions, and incompatibilities. Also includes application of the nursing process to the study of medications and their safe administration.

**NRS 180 Transition to Practical Nursing /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): BIO 202, 205, ECE 117, FSN 124, HCA 102, 155, NRS 104, 105, WRT 101.

Nonclinical course which provides the theoretical preparation to qualify the student to apply for licensure by the Arizona State Board of Nursing as a Practical Nurse (LPN). Includes application of the nursing process to provide basic care to families in the maternity cycle, health of children and psychosocial health. Also includes the role of the LPN in relation to the nursing process.

**NRS 190 Transition to the Associate Degree Nursing Program / 3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Graduate of Pima Community College Practical Nurse (PN) program after May, 1990 or hold a current valid Licensed Practical Nurse (LPN) license in Arizona. Must meet all admission criteria for the Associate Degree Nursing Program.

Nonclinical course facilitating transition of the Licensed Practical Nurse into the Pima Community College (PCC) Associate Degree Nursing (ADN) program. Includes role transition through the application of the nursing process and orients the student to the philosophy and major concepts in the organizing framework of the ADN program. Also includes a focus on adult clients experiencing selected health alterations.

**NRS 196 Independent Study in Nursing /1-4 cr. hrs./1-4 periods (1-4 lec.)**

Prerequisite(s): Consent of instructor.

Independent readings or special projects. Content to be determined by conference between student and instructor.

**NRS 201 Nursing Process III for ADN /9 cr. hrs./17 periods (5 lec., 12 lab)**

Prerequisite(s): NRS 105, BIO 202, 205, ECE 117, FSN 154, HCA 102, 155, and concurrent enrollment in NRS 203, PSY 101, WRT 102.

Continuation of Nursing 105. Application of the nursing process and expansion on the concepts of nurse, health, client, and environment, with an emphasis on family, child and psychosocial health, and on the roles of the nurse as communicator, care provider, care manager, teacher and member of the nursing profession. Includes a focus on family's birth experience as well as complex health alterations related to the developing family, child, and clients with mental disorders in all care settings. Also includes additional clinical and laboratory application of selected nursing skills and knowledge to the developing family, child and seriously mentally ill clients in acute care and community settings.

**NRS 202 Nursing Process IV for ADN /9 cr. hrs./21 periods (3 lec., 18 lab)**

Prerequisite(s): NRS 203, PSY 101, WRT 102.

Continuation of Nursing 201. Application of the nursing process and expansion on the concepts of nurse, health, client, and environment, with emphasis on caring for and managing groups of clients, and on the roles of the nurse as communicator, care provider, care manager, teacher and member of the nursing profession. Includes a focus on clients experiencing multiple and complex health alterations. Also includes additional college and clinical laboratory application of selected nursing skills and knowledge in all healthcare settings. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

**NRS 203 Trends and Issues II /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): NRS 105.

Co-requisite(s): Concurrent enrollment in NRS 201.

Exploration of the nursing role. Includes current issues and trends in nursing and health care delivery and the role of the nurse as a member of the profession.

**NURSING ASSISTANT****NRA 101 Nursing Assistant /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): None.

Basic client care nursing skills. Includes theory base for direct client care and fundamental and advanced psychomotor skills at the nursing assistant level.

**NRA 102 Patient Care Technician /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): Certified Nursing Assistant or successful completion of NRA 101 within the last two years.

Multi-skilled approach to patient care. Includes legal and ethical responsibility, asepsis, dressing changes, catheterization, electrocardiograms, phlebotomy, tube feeding, and communication skills.

**NURSING CONTINUING EDUCATION****NCE 101 Review for NCLEXPN /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Completion of Practical Nursing Program.

Licensure exam preparation. Includes test taking techniques specific to NCLEX format, mock licensure examination and question analysis.

**NCE 160 Intravenous Therapy for Licensed Practical Nurses /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Licensed Practical Nurse and one year current work experience.

Theory and practice needed to administer intravenous fluids and selected premixed medications. Includes assessment of client, pharmacological actions of drugs and fluids, effects on body systems, calculations, prevention and treatment of complications, psychological preparation, alterations to the nursing care plan, and skills acquisition.

**NCE 217 Fundamental Hemodialysis /6 cr. hrs./10 periods (2 lec., 8 lab)**

Prerequisite(s): LPN or RN license.

Principles and purpose of hemodialysis related to vascular access, initiation and termination of hemodialysis. Includes the administration of intravenous solutions.

**NCE 280 The Nurse As Manager /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): LPN, RN or consent of instructor.

Provides information for nurses to successfully transition between the roles of nurse clinician and nurse manager. Includes leadership and management, communication skills, decision making, delegating of work, healthcare policy issues, effective use of power, networking, the law and ethics, and nursing informatics. Also includes change management, quality management, priority management, financial and budget management, management in the work setting, and personnel management.



## PHARMACY TECHNOLOGY

### **PHT 170 Introduction to Pharmacy Technology /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Overview of the allied health professions including the role of pharmacy support personnel, pharmacy law, medical terminology and pharmaceutical abbreviations. Emphasis on the roots, prefixes and suffixes needed to build a medical vocabulary.

### **PHT 171 Pharmaceutical Calculations /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Mathematical computations needed in the practice of pharmacy technology.

### **PHT 172 Drug Therapy I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

The 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 central nervous system, and the autonomic nervous system.

### **PHT 174 Pharmacy Operations /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): PHT 171 or concurrent enrollment.

Technical aspects of drug distribution in both inpatient and outpatient settings, including bulk compounding, packaging, quality control, inventory control, drug storage and drug distribution systems.

### **PHT 178 Pharmacy Microcomputers /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Basic concepts of computer operation. Emphasis on software designed for use in pharmacy.

### **PHT 180 Sterile Products /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): PHT 174.

Application of aseptic techniques and use of the laminar flow hood in the preparation of sterile products.

### **PHT 181 Interprofessional Relations in Pharmacy /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): PHT 170, 174.

Skills necessary for the pharmacy technician to communicate effectively in the following ways: 1) as a representative of the profession of pharmacy, 2) as an intermediary between the pharmacist and the patient, and 3) as an intermediary between the pharmacist and other health care professionals.

### **PHT 182 Drug Therapy II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

The 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.

### **PHT 189 Pharmacy Technician Administration /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Completion of the certificate or consent of instructor.

A comprehensive presentation of practical management techniques for pharmacy technician supervisors and managers. Focus on administration skills in both the hospital and retail pharmacy settings.

### **PHT 193 Clinical Seminar /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHT 190.

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.

### **PHT 194 Pharmacy Technician Internship /4 cr. hrs./16 periods (16 lab)**

Prerequisite(s): Completion of the core curriculum for the certificate.

On-site training in outpatient and inpatient pharmacy services under direct supervision of a designated pharmacist.

## PHILOSOPHY

### **PHI 101 Introduction to Philosophy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of Western Philosophy. Includes primary source readings in western philosophic areas: logic, epistemology, ethics, social/political philosophy, philosophy of religion, metaphysics, philosophy of science, and aesthetics.

### **PHI 120 An Introduction to Logic /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the main types of logical reasoning. Includes the nature of language, deductive logic, and inductive logic. Also includes the principles of sound reasoning in both formal and scientific investigation.

### **PHI 122 God, Mind, and Matter /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the metaphysics and epistemology of the cognitive and material domains of Western philosophy. Includes primary source readings and philosophic method applied to ancient, medieval, modern, and contemporary investigations of God, mind, and matter.



**PHI 123 Philosophical Foundations of Science /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to Western philosophical foundations of science. Includes scientific method, classical, medieval, modern and contemporary ideas regarding science, mathematics, and knowledge, and philosophical problems raised by discovery and change.

**PHI 130 Introductory Studies in Ethics and Social Philosophy /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the study of principles and standards of conduct and morality. Includes such matters as judgments of approval and disapproval, the rightness and wrongness of our acts and the desirability or wisdom of our actions. Emphasis on classical and contemporary meanings of ethical statements, their truth and falsity, their objectivity and subjectivity.

**PHI 140 Philosophy of Religion /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to Western philosophical methods as applied to religion. Includes nature and meaning of religion and God, classical arguments, the impact of religious belief on ethics, psychology, and law in the West, faith and reason, theodicy, and mysticism. This is not a world religions class. (Same as REL 140.)

**PHI 298 Advanced Topics in Philosophy: /1-4 cr. hrs./1-4 periods (1-4 lec.)**

Prerequisite(s): None.

Variable content designed to study specific topics in philosophy. Consult current class schedule for semester offerings. Credit may be earned for each topic taken.

**PHYSICS****PHY 061 Problem Solving for Physics 121 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHY 121.

Strategies and techniques used to solve problems encountered in Physics 121. Includes mathematical skills, error analysis, and graphing, with an emphasis on analysis and solution of word problems.

**PHY 062 Problem Solving for Physics 122 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHY 122.

Strategies and techniques used to solve problems encountered in Physics 122.

Includes mathematical skills, error analysis, and graphing, with an emphasis on analysis and solution of word problems.

**PHY 063 Problem Solving for Physics 210 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHY 210.

Strategies and techniques used to solve problems encountered in Physics 210. Includes mathematical skills, error analysis, and graphing, with an emphasis on analysis and solution of word problems.

**PHY 064 Problem Solving for Physics 216 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHY 216.

Strategies and techniques used to solve problems encountered in Physics 216. Includes mathematical skills, error analysis, and graphing, with an emphasis on analysis and solution of word problems.

**PHY 065 Problem Solving for Physics 221 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHY 221.

Strategies and techniques used to solve problems encountered in Physics 221. Includes mathematical skills, error analysis, and graphing, with an emphasis on analysis and solution of word problems.

**PHY 066 Problem Solving for Physics 230 /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in PHY 230.

Strategies and techniques used to solve problems encountered in Physics 230. Includes mathematical skills, error analysis, and graphing, with an emphasis on analysis and solution of word problems.

**PHY 101 Technical Physics I /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MAT 082 or concurrent enrollment is suggested.

Designed for the technician. Covers the application to the various technology fields of forces in liquids, gases and the equilibrium of bodies; concepts of motion, work and machines; heat energy, and weather and climate. The math used is briefly explained.

**PHY 102 Technical Physics II /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MAT 092 or concurrent enrollment is suggested.

Designed for the technician. Covers the application to the various technology fields of acoustics, electricity, light, optics, and electronics. The math used is briefly explained.

**PHY 115 Physical Science /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): High School algebra.

Basic concepts of mechanics, heat, light, sound, electricity and energy. Included are properties of matter, the atomic theory of matter, and discussion of the impact of modern physics on society.

**PHY 121 Introductory Physics I /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): High school algebra.

Introduction to general physics for programs requiring a one-year, non-calculus based physics course. Includes mechanics and heat.

**PHY 122 Introductory Physics II /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): PHY 121.

Continuation of PHY 121. Includes waves, electricity, magnetism, optics, relativity, and modern physics.

**PHY 195 Introduction to Research in Physics /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Consent of instructor.

Introduction to the methods of research in physics. Includes scientific laboratory procedures, experimental design, scientific writing, scientific ethics, and current research in working laboratories.

**PHY 198 Special Topics in Physics: /1-4 cr. hrs./1-10 periods (1-4 lec., 0-9 lab)**

Prerequisite(s): Consent of instructor.

Introduction to the techniques of laboratory research in physics. Includes topics concerned with scientific laboratory procedures, experimental design, ethics, and current research in working laboratories. Credit may be earned for each topic taken.

**PHY 210 Introductory Mechanics /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): MAT 220 and high school physics.

Calculus-based introduction to mechanics for physics, engineering, and mathematics majors. Includes kinematics, dynamics, and conservation of energy, linear, and angular momentum.

**PHY 216 Introductory Electricity and Magnetism /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): PHY 210, MAT 231.

Calculus-based introduction to electricity and magnetism for physics, mathematics, and engineering majors. Includes electric and magnetic field theory, Gauss's Law, potential theory, capacitance, circuit theory, Ampere's Law, Faraday's Law, and Maxwell's equations.

**PHY 221 Introduction to Waves and Heat /4 cr. hrs./6 periods (4 lec., 2 lab)**

Prerequisite(s): PHY 210, MAT 231.

Calculus-based introduction to waves and heat for physics, mathematics, and engineering majors. Includes fluid statics and dynamics, heat and thermodynamics, simple harmonic motion, wave theory, physical and geometric optics.

**PHY 230 Introduction to Modern Physics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PHY 210 and 216, or PHY 221 and MAT 231.

Calculus-based introduction to modern physics from the theory of relativity to the origins of quantum mechanics. Includes the classical theory of relativity, inertial reference frames, the special theory of relativity, and relativistic kinematics and dynamics.

Also includes the quantization of energy, wave particle duality, early quantum theory, atomic physics and the hydrogen atom, nuclear, and elementary particle physics.

**PHY 295 Independent Research in Physics /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): One semester of physics and consent of instructor.

Experience in scientific laboratory research. Specific content to be determined by student and instructor. May be taken three times for a maximum of twelve credit hours.

**POLITICAL SCIENCE**

**POS 100 Introduction to Politics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic issues, principles, and methods of contemporary political science. Includes the nature of politics and political science, the role of ideas and goals in creating political change, the different forms of government and political behaviors, and modes of international influence and control.

**POS 105 Fundamentals of Arizona Government /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Study of the government of Arizona. Includes its history and politics, the Constitution, the legislature, the executive branch, fiscal and personnel, the judiciary system, trial rights, elections and voting, local governments, urbanization, and intergovernmental relations.

**POS 110 American National Government and Politics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of the institutions of American government and the evolution of our political system. Includes the nature of politics and power, constitutional democracy, federal systems, public opinion, political parties and interest groups, electoral system, congress, the presidency, federal bureaucracy, judiciary, civil liberties, and civil rights. Also includes the positions of economic, ethnic, and religious minorities in American society.

**POS 120 Introduction to International Relations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of contemporary international relations. Includes an overview of various frameworks for the analysis of international relations, the concept of power, formation of foreign policy, international law, international and regional organizations, and the economic, social and political determinants of global political behavior.

**POS 130 American State and Local Governments and Politics / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of state and local government and politics. Includes a survey of state constitutions, political parties, interest groups, elections, major institutions of state and local government, and policy making.

**POS 140 Introduction to Comparative Politics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic concepts and methods of comparative political analysis. Includes the study of both specific countries and of general concepts used to interpret the key political relationships found in virtually all national politics.

**POS 160 Introduction to Political Ideas /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic concepts in political theory. Includes historical and contemporary views on justice and the good society, authority and obligations of political leaders and citizens, the tension between liberty and equality, and tenets of feminism and cultural criticism.

**POS 196 Independent Study in Political Science /2-4 cr. hrs./2-4 periods (2-4 lec.)**

Prerequisite(s): None.

Independent readings or special projects in political science. Content to be determined by conference between student and instructor.

**POS 220 National and State Constitutions /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and procedures of the national and state constitutions. Includes historical and legal environment of the United States and Arizona constitutions, civil rights and civil liberties, opinions and values in national and state politics, linking mechanisms in national and state politics, policymakers, public policy-making, and constitutional change. Satisfies the requirements for teacher certification.

**POS 230 Minority Groups and the Political Process /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Investigation of the position of various minority groups in the American political system. Includes general political attitudes, voting behavior, and patterns of political organization. Also includes party activity and the minority role in the formation of public policy.

**POS 290 Political Science Internship /3 cr. hrs./15 periods (15 lab)**

Prerequisite(s): WRT 101 and 6 credit hours in political science.

Internship with the City of Tucson or other local governmental unit, designed to give students practical experience in government.

**POSTAL SERVICE MANAGEMENT****PSM 140 Mail Processing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and practices of mail processing. Includes mail classification and rates, service standards, postal terminology, mail processing functions, distribution systems, objectives, responsibilities, mail preparation, manual distribution, revenue protection and bulk mail centers.

**PSM 210 Mailroom Procedures and Mailing Techniques /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

In-depth study of business mailroom procedures and techniques. Includes mailroom setup, equipment, personnel administration, time management and U.S. Postal Service requirements for all classes of mail. Prepares student for employment in a business mailroom.

**PSM 260 Postal Problems Analysis /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis and solution of actual postal problems using systematic approaches. Includes problem identification, determination and analysis of dimensions, probable causes, adverse consequences, alternative solutions, and specification and defense of best solution.

**PRODUCTION INVENTORY MANAGEMENT****PIM 110 Production Activity Control for Manufacturing /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques used in manufacturing for Production Activity Control (PAC) of the shop floor. Includes concepts of shop orders, detailed scheduling, data collection and monitoring, control and feedback and order disposition. Candidates for APICS Production Activity Control certification examination will find this course valuable.

**PIM 150 Physical Distribution Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

In-depth study of methods of distributing goods. Physical warehousing, inventory control, materials handling, industrial packaging, order processing and location analysis. Includes managerial responsibilities and recent transportation regulation actions. (Same as MKT 150.)

**PIM 200 Production Planning /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Master planning techniques used for production management and inventory.

Includes business planning, production forecasting, master production scheduling, and techniques in materials management. Candidates for APICS Master Planning certification examination will find this course valuable.

**PIM 210 Production Control /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of production activity control and capacity management. Includes scheduling and controlling the shop floor, capacity requirements planning, resource requirements planning and closed loop Material Requirements Planning (MRP). Candidates for APICS Production Activity Control certification examination will find this course valuable.

**PIM 215 Material and Capacity Requirements Planning /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Beginning and advanced methods of time-phased Material and Capacity Requirements Planning (M&CRP). Includes bills of material, data-requirements, phased inventory requirements, the planner's interface to the MRP system, and methods of capacity planning. Candidates for APICS Material and Capacity Requirements Planning certification examination will find this course valuable.

**PROFESSIONAL DEVELOPMENT**

**PRD 100 From Anxiety to Excitement /.25 cr. hr./25 period (.25 lec)**

Prerequisite(s): Consent of instructor.

Procedures for changing anxiety to excitement. Includes origins of anxiety, the effect on job performance, giving away power and ending up the victim, changing self talk, and increasing enthusiasm at work.

**PRD 101 Powerful Presentations /.5 cr. hr./5 period (.5 lec.)**

Prerequisite(s): Consent of instructor.

Speak powerfully and confidently from informal one-on-one contacts to formal group presentations. Includes increasing comfort when speaking in public, evaluating communication strengths and challenges, improving at least two delivery aspects, techniques to build rapport, enhancing delivery through voice and body language, designing a powerful, engaging self-introduction and a clear message, and how to give dynamic, fun presentations.

**PRD 102 Listening Skills /.25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Listening skills for improved relationships and increased productivity. Includes the cost of poor listening, benefits gained by listening actively, listening with all senses, and designing a plan to improve listening abilities.

**PRD 103 Working with Difficult People /.25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Techniques for dealing with difficult people. Includes organizational behaviors, behavior and productivity, characteristics of a difficult person, dealing with difficult behavior, manifestation of difficult behavior, and interpersonal skills.

**PRD 104 Whole Brain Time and Energy Management /.25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

A whole brain approach to time and energy management. Includes self assessment of brain side preference, traditional time management principles, assessing energy drains and pluses, personality types, and energy management, and whole brain activities. Also includes an emphasis on the relationship to stress management.

**PRD 105 Assertive Communication /.25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Exploring communication styles and the ability to be appropriately assertive. Includes current communication style, techniques for better listening habits, healing with negativity, defining assertiveness, aggressiveness, and sub-assertiveness, and demonstrating proficiency at being assertive.

**PRD 106 Coaching for Higher Performance /.25 cr. hrs./25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Advanced techniques that will further develop the coaching skills of experienced managers and team leaders. Includes advanced coaching skills, mentoring, coaching for breakthrough performance, and handling breakdowns effectively.

**PRD 107 Communicating in Crisis Situations /.5 cr. hr./5 periods (.5 lec.)**

Prerequisite(s): Consent of instructor.

Development of skills for communicating in crisis situations. Includes increasing communication skills, communication styles, adjusting styles to meet different situations, and methods for reducing anxiety and staying calm.

**PRD 108 Creative Thinking /.25 cr. hr./25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Exploring creative thinking. Includes recognizing and utilizing inherent creativity, applying the creative process to a business situation, identifying the psychological barriers to creativity, identifying thinking styles and how they can be applied to daily challenges, and applying creative thinking techniques to problem solving.

**PRD 109 Ethics in the Workplace /.25-3 cr. hrs./25-3 periods (.25-3 lec.)**

Prerequisite(s): Consent of instructor.

Techniques and tools for making ethical and moral decisions in the workplace. Includes definition of terms, common ethical dilemmas, tools for preventing dilemmas, and techniques for using tools.

**PRD 110 Meeting Management / .25 cr. hr./ .25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Techniques for making meetings more productive. Includes determining when a meeting is required, alternatives to formal meetings, preparing for a meeting, and effectively conducting a meeting.

**PRD 111 Motivating Employees to Achieve / .25 cr. hr./ .25 periods (.25 lec.)**

Prerequisite(s): Consent of instructor.

Techniques for working more effectively with employees. Includes creating a positive working environment, the power of recognition, soliciting ideas and feedback, and how to have fun at work and still get the job done.

**PRD 112 Setting Objectives and Evaluating Performance / .25 cr. hr./ .25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Employee performance management. Includes documentation, feedback, goal setting, and using the new evaluation instrument.

**PRD 113 Managing Multiple Projects / .25-3 cr. hrs./ .25-3 periods (.25-3 lec.)**

Prerequisite(s): Consent of instructor.

Techniques to gain control over time and tasks. Includes planning and prioritizing for high performance, developing efficiency and organizational skills, and minimizing pressure and handling stress.

**PRD 114 Coaching Skills for Managers and Team Leaders / .25 cr. hr./ .25 period (.25 lec.)**

Prerequisite(s): Consent of instructor.

Basic coaching skills designed to help lead individuals and work teams to higher levels of productivity and performance. Includes background and organizational context for coaching, characteristics of a coach, seven basic coaching skills, the five-step coaching model, and the characteristics of being a masterful coach.

**PRD 130 Emotional Intelligence / 3 cr. hrs./ 3 periods (3 lec)**

Prerequisite(s): None.

Study of the development and control of typical and atypical emotional behavior in children and young adults. Includes the formation of emotional intelligence and its relationship to achieving life goals, the development of empathy, ethics, altruism, sociopathic behaviors, molestation, the social arts and social intelligence, the effect of family behavior and child rearing practices, trauma, and temperament on adjustment to life's stress. Also includes the neurochemistry involved in aggression, depression, and techniques for schools to teach emotional control.

**PRD 135 Violent Mind / 1 cr. hr./ 1 period (1 lec)**

Prerequisite(s): None.

Study of violence, the function, and the effects of conditioning on the brain of violent people. Includes the effects of drugs, early childhood, parenting and society's involvement on violent behavior, and learning to be violent and the roots of violent behavior. Also includes programs designed to help change emotional behavior.

**PRD 198 Professional Development: / .25-3 cr. hrs./ variable periods (variable lec., lab)**

Prerequisite(s): Consent of instructor.

Customized variable credit course to meet the professional development training needs of business and industry. Includes topics which reflect current issues, trends, and technologies.

**PROFESSIONAL FLIGHT TECHNOLOGY****PFT 101 Stage One Ground School / 4 cr. hrs./ 4 periods (4 lec.)**

Prerequisite(s): None.

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.

**PFT 130 Stage Three Commercial Ground School / 5 cr. hrs./ 5 periods (5 lec.)**

Prerequisite(s): Consent of instructor.

Preparatory course for Federal Aviation Administration (FAA) Commercial Pilot Certification. Includes the information required to pass the FAA written test for the Commercial Pilot Certificate.

**PFT 204 Stage Four Commercial Pilot (Instrument) Ground School / 4 cr. hrs./ 4 periods (4 lec.)**

Prerequisite(s): PFT 101 and consent of instructor.

Knowledge and procedures for the Federal Aviation Administration (FAA) instrument pilot certificate. Includes government publications, radio aids, air traffic control procedures, Federal Aviation Regulations (FAR), cross country operations and procedures, weather theory, aviation weather data, flight instruments and systems, attitude instrument flight, flight physiology, and final examination.



**PFT 230 Flight Instructor Fundamentals of Instruction /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PFT 130, 204, or consent of instructor.

Study of the basic principles of teaching and learning as it applies to the requirements to obtain the Federal Aviation Administration's (FAA) Flight Instructor rating. Includes the fundamentals of conveying aeronautical knowledge and skills to beginning and advanced learners in preparation for FAA examinations.

**PFT 231 Flight Instructor Airplane Ground School /5 cr. hrs./5 periods (5 lec.)**

Prerequisite(s): Possession of an Airplane Flight Instructor certificate and instrument rating.

Theory and procedures associated with the ground school requirements to attain Federal Aviation Administration Flight Instructor certification. Includes aerodynamic principles, engine limitations, pilotage, communications, and federal regulations.

**PFT 250 Flight Instructor Instrument Airplane Ground School /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Permission of an Airplane Flight Instructor certificate and instrument rating.

Theory and procedures associated with the ground school requirements to attain Federal Aviation Administration Flight Instructor - Instrument Airplane certification. Includes the items required by the FAA to obtain an Instrument Flight Rating addition to a Flight Instructor Certificate and a requirement to teach all areas required by the FAA to obtain an Instrument Flight Instructor Airplane Rating addition to a Flight Instructor Certificate.

## PSYCHOLOGY

**PSY 089 Understanding Human Behavior /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The scientific approach to the study of psychology, surveying the physiological, intrapsychic and social-behavioral views of human thought and behavior. Includes sensation and perception, motivation, learning and memory, maturation and development, personality theory and psychotherapy.

**PSY 100A Psychology I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of psychology. Growth of the individual, behavior disorders, social psychology, learning and history of the field.

**PSY 100B Psychology II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of psychology. Biological bases of behavior, sensation, perception, motivation, emotion and stress.

**PSY 101 Introduction to Psychology /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Survey of general psychology, including history and systems, physiology, sensation and perception, learning, motivation, cognition, development, personality, social and psychopathology. Content is a combination of elements of PSY 100A and 100B. Twelfth grade reading level or higher is strongly recommended.

**PSY 140 Introduction to Applied Behavior Analysis /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Introduction to the field of behavior change using client-centered positive approaches. Includes teaching, psychotherapy, personal behavior change programs, law enforcement, addiction, business management, treatment of juvenile offenders, and sports psychology.

**PSY 200 Industrial, Organizational, and Business Psychology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the application of psychological theory and practice to the work place. Includes employment laws and policies, leadership models and characteristics, and organizational structures. Also includes employment-related stress theories and interventions, and designing effective work environments.

**PSY 210 The Brain /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100B or 101.

The study of the anatomy and functioning of the brain and its relationship to thought and behavior. Includes sensing and moving, rhythms and drives, stress and learning and other related topics.

**PSY 211 The Mind /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

The nature of the mind and its relation to the human body. Includes development of the mind, addictions, healing, depression, language processing, thinking and the violent mind.

**PSY 214 Abnormal Psychology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Examination of primary patterns of behavior disorders, including different perspectives on the causes and treatment approaches.



**PSY 215 Human Sexuality /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of human sexual experience throughout the life cycle, viewed from sociological and psychological perspectives. (Same as SOC 215.)

**PSY 216 Psychology of Gender /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Biological and social explanations of gender development and behavior. Includes consequences of gender related attitudes and expectations and implications of human liberation.

**PSY 218 Health Psychology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

An overview of the area of health psychology, including mind-body relationships, behavioral risk factors and psychosocial aspects of specific disorders.

**PSY 220 The Psychology of Death and Loss /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101.

Adjustment to death and loss. Current social and attitudinal considerations are reviewed.

**PSY 224 Investigating Paranormal Psychology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A and 100B or 101 or consent of instructor.

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.

**PSY 226 Psychology of Creative Arts /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A and 100B or 101 or consent of instructor.

Experiential, theory and practice of the primary modalities of art therapy. Includes history, psychological and anthropological theory, analysis of techniques, field applications, and cross-cultural bridges. Also includes individuation, community-building, stress management, and enhancement of professional skills.

**PSY 228 Introduction to Psychodrama /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Practical application of psychodramatic methods. Includes use of warm-up, action, sharing, scene setting, auxiliaries, role reversal, mirror, double, soliloquy, and aside.

**PSY 230 Psychological Measurements and Statistics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A, 100B, MAT 122.

Measurement, quantitative description and statistical inference as applied to psychological variables. Designed for students planning to major or minor in psychology.

**PSY 231 Introduction to Individual Differences and Testing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Survey of individual differences and related assessment techniques (how to interpret test results and what they reveal and don't reveal).

**PSY 242 Futures: A Psychological Perspective /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Psychological processes of designing, planning, and thinking about the future. Includes mind/brain in worldmaking, evolution of socio/cultural systems, theories of change, and action and organization. Also includes the tools for personal futures thinking with an emphasis on the exploration of alternative futures.

**PSY 250 Introduction to Social Psychology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Basic theories and concepts of social psychology and the individual's experience in group situations.

**PSY 254 Psychology of Love and Compassion /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or PSY 101.

Introduction to theory and research on the psychology of love and caring. Includes applications to mental, physical and spiritual health.

**PSY 265 Normal Personality /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Psychological functioning and coping behaviors for normal personality development.

**PSY 270 Meditation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles, techniques, and practice of meditation. Includes information and experiential activities to increase understanding of physical, mental, emotional, social, and spiritual factors in meditation and stress reduction. (Same as HUM 270.)

**PSY 271 Social Psychology of Sport /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis of the relationship of sport to the social psychological principles of socialization, values, concentration, anxiety, aggression, motivation, team interactions, and peak performance. (Same as SOC 271.)

**PSY 273 Psychology of Human Performance /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 101 or 100A.

Psychological theories, research and intervention strategies for enhancing performance in diverse life and work settings. Includes time management, principles of self-regulation, enhancing memory and work habits, setting

goals and dealing with stress. Also includes cognitive theories and approaches to self control, problem solving and decision making, mental imagery, attentional focus, effective communication, and conflict resolution.

**PSY 289 Research Methods /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): PSY 230.

Introduction to scientific methodologies used in psychological research. Includes experience in using a range of psychological research methods for students planning to major or minor in psychology.

**PSY 289A Research Methods /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 230.

Lecture class on scientific methodologies used in psychological research. Includes a selection of psychological research methods. Designed for students planning to major or minor in psychology.

**PSY 289B Laboratory for Research Methods /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): PSY 289A or concurrent enrollment.

Laboratory on experimental research and report writing for PSY 290A. Includes conducting, analyzing and writing reports on original research.

**PSY 290 Social Psychology Practicum /1-6 cr. hrs./3-18 periods (3-18 lab)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Familiarization with specific areas of social psychology. Includes pertinent research, directed observation, and personal participation in relevant experimental or natural settings. May be taken two times for a maximum of six credit hours.

**PSY 296 Individual Studies in Psychology /1-6 cr. hrs./ 1-6 periods (1-6 lec.)**

Prerequisite(s): PSY 100A or 101 or consent of instructor.

Exploration of special interest areas. Content to be determined by student and facilitator-instructor. May be taken two times for a maximum of six credit hours.

**PSY 298 Advanced Topics in Psychology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): PSY 100A and 100B, or 101 or consent of instructor.

Variable content designed to respond to advances in psychology, relationships between psychology and other areas, special student interests and needs and faculty expertise in special topics. (Consult current class schedule for specific content.) Credit may be earned for each topic taken.

## PUBLIC ADMINISTRATION

**PAD 105 Introduction to Public Administration /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Major issues, problems and options facing public sector policy-makers and administrators.

**PAD 204 Introduction to the Analysis of Data for Decision Making / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Informal and exploratory approaches to the analysis of empirical data in a managerial decision making context.

## PUBLIC SAFETY COMMUNICATIONS

**PSC 120 Public Safety Communications I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Skills and concepts of Public Safety telecommunications. Includes an historical perspective, interpersonal communications skills, public access, organizational structure, and current technology.

**PSC 121 Public Safety Communications II /3 cr. hrs. /3 periods (3 lec.)**

Prerequisite(s): None.

Continuation of PSC 120. Includes organizational structure, interpersonal communication skills, stress management, hazardous materials, and basic and advanced life support.

**PSC 130 Communication Center Operations I /3 cr. hrs. /3 periods (3 lec.)**

Prerequisite(s): None.

Performance skills and concepts of a public safety telecommunications operation center. Includes organizational structure, skills training, technology, liability, interpersonal communications, customer service, and computer databases.

**PSC 131 Communication Center Operations II /3 cr. hrs. /3 periods (3 lec.)**

Prerequisite(s): None.

Continuation of PSC 130. Includes an historical perspective, interpersonal communications skills, public access, organizational structure, standard operating procedures, current technology, and the use of computers.

**PSC 190 Field Experience /1-4 cr. hrs. /5-20 periods (5-20 lab)**

Prerequisite(s): Consent of instructor.

Field experience providing the opportunity to apply course work in a planned and supervised public safety communications setting.

**PSC 199 Co-op Related Class in PSC /1 cr. hrs. /1 periods (1 lec.)**

Prerequisite(s): Consent of instructor.

See Cooperative Education section for description.

**PSC 199 Co-op Work in PSC /1-8 cr. hrs. /5-40 periods (5-40 lab)**

Prerequisite(s): Consent of instructor.

See Cooperative Education Section for description.

**QUALITY CONTROL TECHNOLOGY****QCT 101 Quality Control I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 092 or satisfactory score on the math assessment test.

Introduction to the concepts of quality control. Includes basic statistics, use of control charts for attributes and variables, linear correlation, and assigned experiments. Also includes specialized concepts of reliability and maintainability.

**QCT 102 Quality Control II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): QCT 101.

Introduction to the concepts of quality control management. Includes quality department organization, quality systems and procedures, procurement quality control, standards and calibration, inspection principles and practices, internal quality audits and the economics of quality control.

**QCT 105 Quality Management for the Receiving Area /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REA 073, MAT 082.

Analysis of quality management for the receiving area in the manufacturing environment. Includes product acceptance types and methods, configuration control and traceability, hardware disposition, and qualification of supplies and verification of hardware.

**QCT 106 Quality Specialist: Receiving Area Inspection /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): QCT 105.

Principles and procedures of quality management in the receiving area of a manufacturing environment. Includes inspection tasks common to all shipments; receiving and processing of source and in-house inspected materials such as electrical, mechanical, sister division, raw, and certified supplier materials; and documenting nonconforming material.

**QCT 110 Nondestructive Inspection /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): MAC 285, MAT 110.

Parts inspection for production defects. Includes types of discontinuities, principles of nondestructive inspection methods, equipment and test procedures, applicable specifications and standards, interpretation and evaluation of test results.

**RADIOLOGIC TECHNOLOGY****RAD 170 Medical Imaging Fundamentals /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): Admission into program.

Principles of radiographic imaging. Includes medical imaging equipment, image formation, positioning of the chest, and radiation protection.

**RAD 171 Radiographic Positioning I /4 cr. hrs./ 6 periods (3 lec., 3 lab)**

Prerequisite(s): RAD 170 and consent of program coordinator.

Radiographic positioning of the abdomen, upper and lower extremities, pelvic girdle, and spine. Includes patient care, anatomy, and pathology.

**RAD 172 Medical Imaging Technology I /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): RAD 170 and consent of program coordinator.

Radiographic image production and evaluation. Includes image quality, quality assurance, radiation protection, and film processing.

**RAD 173 Clinical Education I /4 cr. hrs./16 periods (16 lab)**

Prerequisite(s): RAD 170 and consent of program coordinator.

Application of general radiographic procedures in a clinical education center under the supervision of a certified radiographer. Includes safety practices and patient care.

**RAD 174 Radiographic Positioning II/4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): RAD 171, 172, 173.

Radiographic positioning of the ribs and shoulder girdle. Includes fluoroscopic procedures of the upper/lower gastrointestinal tract, biliary, and genitourinary systems.

**RAD 175 Medical Imaging Technology II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): RAD 171, 172, 173.

Principles of x-ray production. Includes radiation physics, x-ray generators, diagnostic radiographic systems, and radiation safety.

**RAD 176 Clinical Education II /4 cr. hrs./24 periods (24 lab)**

Prerequisite(s): RAD 171, 172, 173.

Continuation of RAD 173. Includes application of special radiographic positioning of the skeletal system exclusive of the skull. Also includes emergency radiographic procedures.

**RAD 177 Clinical Education III /6 cr. hrs./36 periods (36 lab)**

Prerequisite(s): RAD 174, 175, 176.

Continuation of RAD 176. Includes surgical radiographic procedures.

**RAD 181 Radiographic Positioning III /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): RAD 177.

Radiographic positioning of the skull, special imaging procedures, and radiation biology. Includes radiographic critique and anatomy.

**RAD 182 Medical Imaging Technology III /4 cr. hrs./6 periods (3 lec, 3 lab)**

Prerequisite(s): RAD 177.

Specialized and advanced medical imaging systems. Includes mobile radiography, tomography, image intensification, special procedures, Nuclear Medicine, Ultrasound, CT Scanning, and Magnetic Resonance Imaging.

**RAD 183 Clinical Education IV /4cr. hrs./24 periods (24 lab)**

Prerequisite(s): RAD 177

Continuation of RAD 177. Includes fluoroscopy, mobile, and special radiographic procedures.

**RAD 184 Radiographic Positioning IV /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): RAD 181, 182, 183.

Routine positioning for mammography, pediatrics, cardiovascular, and interventional examinations. Includes anatomy, patient care, patient management, and medical emergencies.

**RAD 185 Clinical Seminar /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): RAD 181, 182, 183.

Presentations on radiographic procedures. Includes image production, patient care, equipment operation, and radiation protection.

**RAD 186 Clinical Education V /4 cr. hrs./24 periods (24 lab)**

Prerequisite(s): RAD 181, 182, 183.

Continuation of RAD 183. Includes advanced imaging procedures, Computer Tomographic Scanning, Magnetic Resonance Imaging, and radiographic positioning of the skull.

**RAD 210 Sectional Anatomy of the Head and Neck /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): American Registry of Radiologic Technologists certification or permission of instructor.

Three dimensional anatomy presented in sagittal, transverse, and coronal planes of the head and neck. Includes structure identification and anatomic relationships of the bones, organs, muscles, nerves, and cavities.

**RAD 211 Sectional Anatomy of the Abdomen /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): American Registry of Radiologic Technologists certification or permission of instructor.

Three dimensional anatomy presented in sagittal, transverse, and coronal planes of the abdomen. Includes structure identification and anatomic relationships of the bones, organs, muscles, nerves, and cavities.

**RAD 212 Sectional Anatomy of the Thorax /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): American Registry or Radiologic Technologists certification or consent of instructor.

Three dimensional anatomy presented in sagittal, transverse, and coronal planes of the thorax. Includes structure identification and anatomic relationships of the bones, organs, muscles, nerves, and cavities.

**READING**

**REA 040 Basic Reading /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of skills necessary to prepare for and pass the General Education Development (GED) test.

**REA 068 Techniques of Vocabulary /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Vocabulary improvement through a variety of methods such as structural analysis and context clues. Emphasis on understanding word roots and derivatives to enable students to expand their existing vocabularies and use words correctly. May be taken four times for a maximum of four credit hours.

**REA 071 Reading Fundamentals /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Satisfactory score on reading assessment test.

Development of fundamental reading strategies. Includes extensive development of word analysis, vocabulary, and reading strategies necessary to assure successful comprehension at the literal level. Designed for persons who need an intensive review of the basic reading strategies. May be taken two times for a maximum of eight credit hours.

**REA 073 Understanding What You Read /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Methods and techniques for reading with greater understanding. Various levels of comprehension are explained and applied to diverse reading materials. Emphasis on following directions, recognizing main ideas and supporting details, recognizing sequence, making inferences, drawing conclusions and differentiating between fact and opinion. May be taken four times for a maximum of eight credit hours.

**REA 075 Spelling /2 cr. hr./2 period (2 lec.)**

Prerequisite(s): None.

Development of strategies for improving spelling. Includes the improvement of spelling skills through study and practice of phonic principles and study of homonyms and their appropriate uses. May be taken two times for a maximum of two credit hours.

**REA 077 Study Skills /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Development of skills in listening, remembering, note taking, outlining, applying study methods and interpreting pictorial aids. May be taken four times for a maximum of eight credit hours.

**REA 078 Test-Taking Techniques /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Techniques of preparing for and taking various types of tests as found in a college setting. May be taken four times for a maximum of four credit hours.

**REA 081 Reading Improvement I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Successful completion of REA 071 with grade of C or better, satisfactory score on reading assessment test or instructor recommendation.

Improvement of basic reading strategies. Includes development of word analysis, vocabulary, and reading strategies necessary to assure successful comprehension at the literal and text-based levels. Designed for persons who need to improve reading strategies in order to increase their success in college. May be taken two times for a maximum of eight credit hours.

**REA 091 Reading Improvement II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Successful completion of REA 081 with grade of C or better, satisfactory score on reading assessment test or instructor recommendation.

Development of reading strategies. Includes literal and critical comprehension, textbook reading strategies, analytical reasoning, reading rate improvement, and vocabulary expansion and retention. Designed for persons who need to improve reading strategies in order to increase their success in college. May be taken two times for a maximum of eight credit hours.

**REA 112 College Reading I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Successful completion of REA 091 with grade of C or better, satisfactory score on reading assessment test or instructor recommendation.

Development of college reading strategies. Includes emphasis on mastering and applying college reading strategies and developing sophistication in applying critical thinking and study strategies in order to help the student succeed in college or other occupational environments. Designed for persons near or at college level. May be taken two times for a maximum of eight credit hours.

**REA 120 College Reading II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Successful completion of REA 112 with grade of C or better, satisfactory score on reading assessment test or instructor recommendation.

Refinement of college reading. Includes emphasis on refining and applying college reading strategies and on applying critical thinking and study strategies. Designed for persons at college reading level who want additional instruction in reading, critical thinking and study strategies. May be taken two times for a maximum of eight credit hours.

**REA 125 Speed Reading /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): Comprehension score of 12.0 on the college reading assessment test.

Improvement of reading rate. Emphasis on comprehension and analysis of written passages using various visual perception techniques.

**REAL ESTATE**

**RLS 083 Environmental Issues for Relators /2 cr. hrs./3 periods (2 lec., 1 lab)**

Prerequisite(s): None.

Technical and legal issues concerning the sale of commercial, industrial, and residential properties that may involve "environmental damage." Includes detailed Environmental Phase I Site Assessments. Not for ENV majors. (Same as ENV 083.)

**RLS 101 Introduction to Real Estate Principles /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to real estate, including associated rules and regulations. The Arizona Department of Real Estate will accept this course as satisfying forty-five (45) of the ninety (90) hour pre-licensing educational requirements.

**RLS 105 Principles of Real Estate/License Preparation /6 cr. hrs./6 periods (6 lec.)**

Prerequisite(s): None.

Introduction to real estate, including associated rules and regulations. The Arizona Department of Real Estate accepts this course as satisfying the 90 hour pre-licensing educational requirements. RLS 105 covers the same material as RLS 101, but more in-depth.

**RLS 202 Real Estate Appraisals /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Basic principles and practical application of real estate appraisals. Includes valuation terms, market analysis, classification of data and income and cost factors.



**RLS 205 Real Estate Finance /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of real estate finance from the viewpoint of the home mortgage loan officer. Includes the mortgage market, acquisition of a mortgage portfolio, mortgage plans and procedures, mortgage loan processing and servicing and duties of the mortgage loan officer. (Same as FIN 205.)

**RLS 252 Advanced Appraisal Techniques /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): RLS 202 or consent of instructor.

Provides understanding of the mathematical procedures used to analyze data and derive value estimates for income-producing properties. Includes the theory and application of the income capitalization approach to appraisal. Also includes discounted cash flow analysis.

## RECORDS AND INFORMATION MANAGEMENT

**RIM 121 Introduction to Health Information Management /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Overview of organization and analysis of the health record. Includes health record, health record systems, ancillary department relationships, and accreditation standards.

**RIM 132 Records Management: Filing Systems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and procedures of filing and practice in the basic filing systems. Includes filing rules, filing systems, and file maintenance and management.

**RIM 132A Records Management: Filing Systems A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

The indexing, coding, cross-referencing and alphabetizing of personal and business, government agency and other names.

**RIM 132B Records Management: Filing Systems B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): RIM 132A.

Alphabetical rules of filing applied to geographic, subject and numeric filing. Also deals with methods of storing and retrieving information and plans for retention, transfer and disposal of records.

**RIM 132C Records Management: Filing Systems C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): RIM 132B.

Filing procedures used in subject, numeric and/or geographic filing.

**RIM 133 Records Management: Development of a Program /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles of file management from creation to final disposition. Includes records information management program development, technology in records information management, related records information management functions, and inactive records information management.

**RIM 221 Medical/Health Record Coding /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ASC 262, BIO 204, RIM 121.

Overview of coding classification systems. Includes terminology, principles and components of coding systems, codes for disease, condition, operations, and nonsurgical procedures, information from health records, and coding for the highest specificity.

**RIM 231A Records Management: Forms Management /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): RIM 133.

Analysis of current forms, design of new forms, and the establishment of a forms management program.

**RIM 231B Records Management: Micrographics /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): RIM 133.

The photographic process, selection and operation of equipment, selection of supplies, use of indexing systems, design of micrographic systems and standards, legality, trends and integration of micrographics in records management.

**RIM 231C Records Management: Automated Retrieval /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): RIM 133.

Non-computerized information management systems. Includes practice in using the computer to create, maintain and report information.

**RIM 232 Records Management: Supervision /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): RIM 133.

A practical approach to office organization and administrative management. Emphasizes management of administrative services, physical resources, human resources, systems and procedures.

**RIM 233 Supervision and Administration of Records /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): RIM 133.

Theory and practice of administrative record keeping. Includes supervision of records, forms management, and records management technology.



**RIM 298 Advanced Topics in RIM: /25-4 cr. hrs./25-16 periods  
(.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Customized instruction developed to meet student needs or interests. Includes objectives and content to meet a topic of specific or timely interest.

## RECREATION

**REC 120 Leisure and Society /3 cr. hrs./3 periods (3 lec)**

Prerequisite(s): None

Overview of recreation and leisure, and their role in contemporary society. Includes the history of leisure and work, theoretical perspectives, contemporary factors affecting leisure and play, ethics, conceptualizing leisure, role of leisure and recreation in society, and leisure services as a profession. (Same as TVL 120.)

**REC 210 Leisure Delivery Systems /3 cr. hrs./3 periods (3 lec)**

Prerequisite(s): REC/TVL 120.

Introduction to development, management, and organization of the leisure services profession. Includes the significance of leisure and tourism in society, leisure and tourism as a profession, delivery systems, and organizational management. (Same as TVL 210.)

**REC 250 Leadership in Recreation and Tourism /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and strategies of leadership as applied to recreational and tourism settings. Includes leisure services, leadership, planning and evaluation, and communication skills. (Same as TVL 250.)

**REC 283 Customer Service and Program Planning /3 cr. hrs./3 periods (3 lec)**

Prerequisite(s): None.

Essential elements and basic principles of recreational service and planning. Includes planning, marketing, and evaluating a program, and customer service.

**REC 290 Fieldwork /3-6 cr. hrs./15-30 periods (15-30 lab)**

Prerequisite(s): Consent of instructor.

Field experience providing the opportunity to apply coursework in a planned and supervised recreational or tourism setting. May be taken two times for a maximum of six credit hours. (Same as TVL 290.)

## RELIGION

**REL 119 Western Religions /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to Judaism, Christianity, and Islam. Includes historical development, teachings, festivals, and rituals. Also includes common heritage, emphasis and variations in Judaism, Christianity, and Islam.

**REL 130 Asian Religions /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Religions of India and the Far East. Includes Hinduism, Buddhism, and East Asian religions.

**REL 140 Philosophy of Religion /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to Western philosophical methods as applied to religion. Includes nature and meaning of religion and God, classical arguments, the impact of religious belief on ethics, psychology, and law in the West, faith and reason, theodicy, and mysticism. (Same as PHI 140.)

**REL 200 Religion on Popular Culture /3 cr. hrs./3 periods (3 lec)**

Prerequisite(s): None.

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 (movies, television, music, news, advertising, and recreation).

**REL 220 Old Testament /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Major books of the Old Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

**REL 221 New Testament /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Major books of the New Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

**REL 233 Early Christianity /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History and selected writing of the first three hundred years of Christianity. Includes the world of early Christianity, major issues in early Christianity, and writings of major Church Fathers.

**REL 234 Islam /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History and literature of Islam. Includes texts of the Qur'an, life of the Prophet Mohammed, basic tenets and practices of Islam, poetry and practices of the Sufi poets, and the historical development of Islam from the eighth century to the present.

**REL 273 Judaism /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the Jewish religion. Includes the nature and central themes of Judaism, Days of Awe, Shabbat, Pesach, Shavuot, Lots, Hanukkah, institutions, and life cycle events.

**REL 275 Native American Worldviews /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Native American views of reality, morality, religion, and society. Includes regions and cultural traditions, significant features, and interpretive issues.

**REL 298 Advanced Topics in Religious Studies: /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Variable content designed to study specific topics in religious studies. Consult current class schedule for semester offerings. Credit may be earned for each topic taken.

**RESERVE OFFICERS TRAINING CORPS (ROTC)-AIR FORCE**

**MLA 100 Air Force Today I /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Review of the history, functions, and organization of the Air Force, Air Force doctrine, national strategy, and strategic offensive forces. Includes leadership building activities such as professional training and orientation, fitness training, and drill and ceremony training. (Course offered in cooperation with the University of Arizona.)

**MLA 101 Air Force Today II /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Strategic defensive forces, U.S. general purpose forces, and the support commands and operating agencies of the Air Force. Includes leadership building activities such as professional training and orientation, fitness training, and drill and ceremony training. (Course offered in cooperation with the University of Arizona.)

**MLA 200 History of Air Power I /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Review of chronological development of air power from the advent of the air age through World War II. Includes leadership building activities such as professional training and orientation, fitness training, and drill and ceremony training. (Course offered in cooperation with the University of Arizona.)

**MLA 201 History of Air Power II /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

The development of the Air Force from 1946 to the present. Includes leadership building activities such as professional training and orientation, fitness training, and drill and ceremony training. (Course offered in cooperation with the University of Arizona.)

**RESERVE OFFICERS TRAINING CORPS (ROTC)-ARMY**

**MLS 100 Introduction to Leadership /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Organization of the Army. Includes principles and techniques of applied leadership, customs, traditions and military courtesy. (Course offered in cooperation with the University of Arizona.)

**MLS 101 Leadership Principles /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and techniques of military leadership. Includes customs, basic marksmanship, first aid, land navigation, small-unit tactics and practicum. (Course offered in cooperation with the University of Arizona.)

**MLS 200 Army Composition/Function and Leadership Development I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Military staff organization and operation. Includes procedures and conduct of military briefings and benefits. (Course offered in cooperation with the University of Arizona.)

**MLS 201 Army Composition/Function and Leadership Development II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Responsibilities and obligations of a commissioned officer. Includes small unit leadership, motivation and practicum. (Course offered in cooperation with the University of Arizona.)

**RESERVE OFFICERS TRAINING CORPS (ROTC)-NAVY**

**NSP 100 Naval Laboratory I /1 cr. hr./2 periods (2 lab)**

Prerequisite(s): None.

Applied exercises in naval ship systems, navigation, naval operation, naval administration and military justice. For freshman NROTC students at the

University of Arizona. Includes such topics as drill and ceremonies, physical fitness, cruise preparation, sail training, safety awareness, personal finance and applied exercises. May be taken two times for a maximum of two credit hours.

**NSP 101 Introduction to Naval Science /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

An introduction to the Naval profession and to concepts of sea power. Includes an emphasis on missions, organizations and warfare components of the Navy and Marine Corps, Naval courtesy and customs, military justice, leadership, and nomenclature. (Course offered in cooperation with the University of Arizona.)

**NSP 102 Naval Ship Systems I: Engineering /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Ship characteristics and types. Includes ship design, hydrodynamic forces, stability compartmentation, propulsion, electrical and hydraulic systems, interior communications, ship control and damage controls. Also includes theory and design of steam, gas turbine and nuclear propulsion. (Course offered in cooperation with the University of Arizona.)

**NSP 200 Naval Laboratory II /1 cr. hr./2 periods (2 lab)**

Prerequisite(s): None.

Continuation of NSP 100. For sophomore NROTC students at the University of Arizona. May be taken two times for a maximum of two credit hours.

**NSP 201 Naval Ship Systems: Weapons /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Theory and employment of weapons systems. Includes the processes of detection, evaluation, threat analysis, selection, delivery and guidance. Physical aspects of radar and underwater sound are also covered. Field trip. (Course offered in cooperation with the University of Arizona.)

**NSP 202 Sea Power and Maritime Affairs /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

U.S. Naval history from the American Revolution to the present. Includes a discussion of the theories of Mahan, political issues of merchant marine commerce, and a comparison of U.S. and Soviet naval strategies. Field trip. (Course offered in cooperation with the University of Arizona.)

## RESPIRATORY THERAPY

**RTH 110 Introduction to Respiratory Care /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Admission to the RTH program or consent of instructor.

Overview of respiratory care, its evolution as a profession and its current relation to the modern health care system. Includes medical terminology,

health communication, general patient care principles, as well as ethical and legal implications of health care. Also includes study of infection control and physical principles related to respiratory care.

**RTH 112 Respiratory Physiology /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Admission to RTH program and BIO 160.

Study of the cardiopulmonary system and associated structures. Includes nervous system control of ventilation, renal system, and principles involved in ventilation and gas transport. Also includes the effects of aging, exercise, and altitude on the cardiopulmonary system.

**RTH 121 Basic Therapeutics /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): RTH 110, 112.

Co-requisite(s): Concurrent enrollment in RTH 125.

Basic respiratory care therapeutics, equipment function, clinical indications and contraindications. Includes medical gas administration, humidity and aerosol therapy, hyperinflation therapy, chest physiotherapy, basic cardiac life support, and basic airway management.

**RTH 123 Basic Assessment and Monitoring /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): RTH 110, 112.

Co-requisite(s): Concurrent enrollment in RTH 121.

Study of patient assessment, diagnostic procedures, and testing techniques. Includes the detection and monitoring of adult, neonatal and pediatric cardiorespiratory disorders. Also includes participation in a service-learning project.

**RTH 124 Pharmacology for Respiratory Care /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): RTH 110, 112.

Principles of pharmacology, drug dose calculations, and drug receptor theory as it relates to patients with cardiopulmonary disease. Includes specific emphasis on drugs used by respiratory care practitioners as well as discussion of other drugs used in the treatment of patients under their care.

**RTH 125 Clinical Procedures I /1 cr. hr./4 periods (4 lab)**

Prerequisite(s): RTH 110, 112.

Clinical application of all prerequisite and concurrent respiratory care course work. Includes hospital and departmental organization, professionalism, medical record utilization, oxygen administration and analysis, and respiratory physiology principles applied to patient care.

**RTH 135 Clinical Procedures II /4 cr. hrs./16 periods (16 lab)**

Prerequisite(s): RTH 121, 123, 124, 125.

Continuation of RTH 125. Includes clinical application of all prerequisite respiratory care course work. Also includes basic respiratory care therapeutics, basic assessment, monitoring, and clinical application of cardiopulmonary medications.

**RTH 241 Critical Care Therapeutics /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): RTH 121, 123, 124, 125, 135.

Co-requisite(s): Concurrent enrollment in RTH 243.

Study of critical care principles and procedures in the adult patient. Includes advanced airway management, mechanical ventilation principles, care of the mechanically ventilated patient, and alternatives to conventional ventilation.

**RTH 243 Advanced Assessment and Monitoring /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): RTH 135.

Co-requisite(s): Concurrent enrollment in RTH 241.

Study of the assessment of the critical respiratory patient. Includes advanced diagnostic studies and testing techniques employed in the detection and monitoring of adult, neonatal, and pediatric cardiorespiratory disorders. Also includes participation in a service-learning project.

**RTH 245 Clinical Procedures III /4 cr. hrs./16 periods (16 lab)**

Prerequisite(s): RTH 135.

Co-requisite(s): Concurrent enrollment in RTH 241, 243, 246.

Continuation of RTH 135. Includes clinical application of all prerequisite respiratory care course work with emphasis on adult critical care, assessment and monitoring. Also includes cooperative and problem-based learning and students will interact with and present case studies to the program's medical director.

**RTH 246 Cardiorespiratory Disorders I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): RTH 121, 123, 124.

Study of commonly encountered respiratory disorders in the adult patient. Includes examination of the etiology, pathology, pathogenesis, clinical manifestations and treatment of a variety of common adult pulmonary diseases.

**RTH 251 Specialty Therapeutics /5 cr. hrs./7 periods (4 lec., 3 lab)**

Prerequisite(s): RTH 241, 243, 245, 246.

Study of respiratory therapies used in specialized environments. Includes basic and advanced respiratory care of the neonatal and pediatric patient, discussion of fetal development, birth, transitions, neonatal and pediatric resuscitation, neonatal mechanical ventilation, selected ventilators, high frequency ventilation and extracorporeal membrane oxygenation. Also includes advanced cardiac life support (ACLS), pulmonary rehabilitation, respiratory care outside of the hospital environment, balloon pump function, hyperbaric oxygenation and recent advances in respiratory care techniques and procedures.

**RTH 255 Clinical Procedures IV /4 cr. hrs./20 periods (20 lab)**

Prerequisite(s): RTH 241, 243, 245.

Co-requisite(s): Concurrent enrollment in RTH 251, 256, 257.

Continuation of RTH 245. Includes clinical application of all prerequisite respiratory care course work with emphasis on adult critical care, neonatal/

pediatric basic and critical care therapeutics, assessment and monitoring, pulmonary rehabilitation, and specialized environments for the delivery of respiratory care.

**RTH 256 Cardiorespiratory Disorders II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): RTH 246.

Continuation of RTH 246. Includes the study of commonly encountered respiratory disorders in the adult patient and examination of pulmonary problems related to the newborn and pediatric patient. Also includes examination of the etiology, pathology, pathogenesis, clinical manifestations, and treatment of selected adult, neonatal, pediatric cardiopulmonary diseases.

**RTH 257 Clinical Applications and Professional Development /1 cr. hr./4 periods (4 lab)**

Prerequisite(s): RTH 241, 244.

Co-requisite(s): Concurrent enrollment in RTH 251, 255, 256.

Completion of clinical application group projects. Includes preparation of resumes, review for credentialing exams, present clinical case studies, and interaction with the program's medical director. Also includes participation in a service-learning project.

**RTH 298 Advanced Topics in Respiratory Therapy: /25-4 cr. hrs./25-12 periods (.25-4 lec., 1-2 lab)**

Prerequisite(s): Consent of instructor.

Advanced topics in respiratory therapy which reflect new trends and developments, innovations in methodologies and technologies, and subjects of professional and community concern. Credit may be earned for each topic taken.

**RESTAURANT, CULINARY, AND FOODSERVICE MANAGEMENT**

**RCF 100 Basic Foodservice Skills /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): None.

Kitchen and dining room preparation skills. Includes foodservice sanitation and hygiene, safety, kitchen equipment and knives, food storage, inventory control, recipe usage, dining room service and skills, and dish room and kitchen preparation skills.

**RCF 101 Principles of Restaurant Operations /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Fundamentals of operating and managing small and large restaurants. Includes concept development, menu development, budgeting and controlling costs, financing and leasing, legal and tax matters, defining jobs and organizing the restaurant, staffing the restaurant, employment training and

development, equipment in the kitchen, restaurant marketing, marketing plan, sales and promotion, food purchasing, and customer relations.

**RCF 102 Foodservice Specialty: Culinary Preparation I /3 cr. hrs./ 4 periods (2 lec., 2 lab)**

Prerequisite(s): RCF 101.

Preparation of cuisine specialties. Includes basic cooking principles, recipes, pre-preparation, stocks and sauces, vegetable cookery, starches, breakfast preparation, meat cookery, poultry, fish and shellfish, salads and salad dressings, sandwiches, presentation and garnishing, and bake shop production.

**RCF 103 Foodservice Specialty: Baking I /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): RCF 101.

Essentials of baking. Includes basic principles, ingredients, quick breads, yeast dough, syrups, creams, icings, and sauces, pastries, pies, cake mixing and decorating, cookies, custards, puddings and mousses, and display pieces.

**RCF 104 Foodservice Specialty: Garde-Manger I /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): RCF 102.

Creation and storage of salads, sandwiches, and appetizers. Includes purchasing practices, food platter layout and presentation, cooking methods, salads and dressing, poultry, seafood, meats, show pieces, and canapes and hor d'oeuvres.

**RCF 107 Restaurant Sanitation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of techniques for controlling sanitation in the foodservice operation. Includes product quality, and time and cost management. Pima County Food Sanitation Certification test given at midterm.

**RCF 109 Food and Beverage Control /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): BUS 151, HOS 102.

Principles and procedures for food and beverage systems. Includes planning, control systems design, cost analysis and control of sales income and labor costs.

**RCF 110 Restaurant/Banquet Service /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Concepts and duties of a table server. Includes creative selling, basic etiquette and styles of service, electronic service, teamwork, sanitation and safety, and review/performance appraisals.

**RCF 115 Meat Cutting for the Foodservice Industry /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Butchering of meat for quantity food preparation. Includes history, purchasing guidelines, government regulations, cuts, and usage for pork, lamb/veal, and beef.

**RCF 120 Nutrition in Foodservice /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Principles of culinary nutrition. Includes scientific aspects, life-style impact on food consumption and production, and nutrition applications in foodservice.

**RCF 201 Catering and Banquet Sales and Management /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): RCF 101 and/or one year's experience working in the hospitality-tourism industry.

Techniques of food and beverage sales and service operation. Includes functions of marketing, marketing plan, operations, menu planning, and advertising and promotion. (Same as HOS 201.)

**RCF 202 Foodservice Specialty: Culinary Preparation II /2 cr. hrs./ 4 periods (1 lec., 3 lab)**

Prerequisite(s): RCF 102.

Continuation of RCF 102. Includes a review of the rules of good sanitation, modern kitchen equipment, cooking methods, art of seasoning, creating recipes, food cost, menu development, nutritional considerations, healthy alternatives, soups, family of sauces, meats, cooking methods, vegetable cookery, and potatoes and other starches.

**RCF 203 Foodservice Specialty: Baking II /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): RCF 103.

Continuation of RCF 103. Includes advanced baking principles, baking process, muffins and biscuits, yeast doughs, stages of cooking sugar, pastry cream, meringues, icings, pie doughs, puff pastry, eclair paste, phyllo dough, pie production, cakes, cookies and their characteristics, and souffles.

**RCF 204 Foodservice Specialty: Garde-Manger II /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): RCF 104.

Continuation of RCF 104. Includes review of garde-manger department, aspic and chaud-froid, garde-manger department production, purchasing and procurement of specialty products, various force meats, dinner and theme buffets, ice carvings, plate presentations, cheeses, cured and smoked products, and charcuterie.

**RCF 297 Restaurant, Culinary, and Foodservice Seminar: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Restaurant, culinary, and foodservice job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.



## RUSSIAN

### **RUS 110 Elementary Russian I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Introduction to the Russian language. Includes Cyrillic alphabet, greetings, gender, readings, communications, and activities.

### **RUS 111 Elementary Russian II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): RUS 110.

Continuation of RUS 110. Includes grammar and vocabulary, housing and furniture, family and professions, shopping, money and measurements, and biographies of people.

### **RUS 210 Intermediate Russian I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): RUS 111 or two years of high school Russian.

Continuation of RUS 111. Includes grammar review, plural case endings, prepositional/ accusative cases, weather and climate, and reflexive verbs.

### **RUS 211 Intermediate Russian II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): RUS 210.

Continuation of RUS 210. Includes grammar review, sports terms, health care terms, postal system, traveling in Russia, and etiquette.

## SIGN LANGUAGE

### **SLG 050 Conversational Sign Language I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Conversational sign language skills. Includes intermediate vocabulary, deaf culture, and other signing modes of communicating with the deaf.

### **SLG 055 Conversational Sign Language II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SLG 050.

Conversational sign language skills. Includes intermediate vocabulary, deaf culture, and other signing modes of communicating with the deaf.

### **SLG 101 American Sign Language I /4 cr. hrs./5 periods (3 lec., 2 lab.)**

Prerequisite(s): None.

Introduction to American Sign Language. Includes principles, methods and techniques for communicating with deaf individuals who sign. Also includes a brief history of sign, introduction to Deaf culture, development of expressive and receptive sign skills, manual alphabet, numbers and sign vocabulary. Students will be required to perform additional lab hours outside of the regular classroom schedule. This class is conducted primarily without voice.

### **SLG 102 American Sign Language II /4 cr. hrs./5 periods (3 lec., 2 lab.)**

Prerequisite(s): SLG 101.

Continuation of SLG 101. Includes sign vocabulary, numbers, fingerspelling, and culture. Also includes an emphasis on enhancement of receptive sign skills, further development of expressive sign skills, and application of rudimentary syntactical and grammatical structure. Students will be required to perform additional lab hours outside of the regular schedule. This class is conducted primarily without voice.

### **SLG 201 American Sign Language III /4 cr. hrs./5 periods (3 lec., 2 lab.)**

Prerequisite(s): SLG 102.

Continuation of SLG 102. Includes an integration of ASL expressive and receptive skills using bilingual techniques. Also includes vocabulary expansion, idioms, manual and non-manual aspects of ASL, ASL linguistics, cross-cultural communication, and cultural knowledge of ASL. Students will be required to perform additional lab hours outside of regular classroom schedule. This class is conducted primarily without voice.

### **SLG 202 American Sign Language IV /4 cr. hrs./5 periods (3 lec., 2 lab.)**

Prerequisite(s): SLG 201.

Continuation of SLG 201. Includes continued expansion of sign vocabulary, sharpening of fingerspelling and number skills, and review of and instruction in linguistic knowledge of ASL. Also includes an emphasis on conversational techniques and skills in ASL in a cross-cultural framework. Students will be required to perform additional lab hours outside of regular classroom schedule. This class is conducted primarily without voice.

## SOCIAL SERVICES

### **SSE 110 Introduction to Social Welfare /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the social welfare system. Includes approaches to service delivery, community resources, bureaucratic structures, welfare myths and realities, special populations, and cultural awareness. Also includes local community agencies and resources, welfare policies and case histories.

### **SSE 111 Group Work /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of group dynamics. Includes communication patterns, leadership, decision-making, conflict resolution, problem solving, and personal growth within groups. Also includes application of concepts through observation, group exercises, and case studies.



**SSE 112 Casework Methods I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Theory and practice of casework within the context of the Southwest. Includes case management, interviewing, case history and review, treatment planning, and development of helping relationships. Also includes major helping theories and strategies, and examination of case examples from various social service settings.

**SSE 120 Drugs in American Society /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the drug problem in the United States. Includes classification of drugs, historical review of drug law, theories of addiction, treatment strategies, cultural perspectives, and treatment interventions. Also includes an examination of drug use from the philosophical and social viewpoints.

**SSE 122 Introduction to Alcohol Abuse /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the historical use and abuse of alcohol. Includes identification and treatment, treatment alternatives, ethical issues, special populations, education, and resources available to abusers, alcoholics, and their families.

**SSE 130 Gerontology: Casework Practice /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 112 recommended.

Development of casework management skills specializing on the elderly. Includes intake, assessment, referral, care planning, communication within a professional team setting, and the wellness of elders living in the community.

**SSE 132 Aging: Health and Physiology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of the health and physiology of the elderly. Includes disabilities, nutrition, medication and drugs, chronicity, sensory loss, and other aspects of the normal aging process. Also includes recognition of health problems and making appropriate referrals.

**SSE 140 Domestic Violence: Causes and Cures /3 cr. hrs./3 periods (3 lec.)**

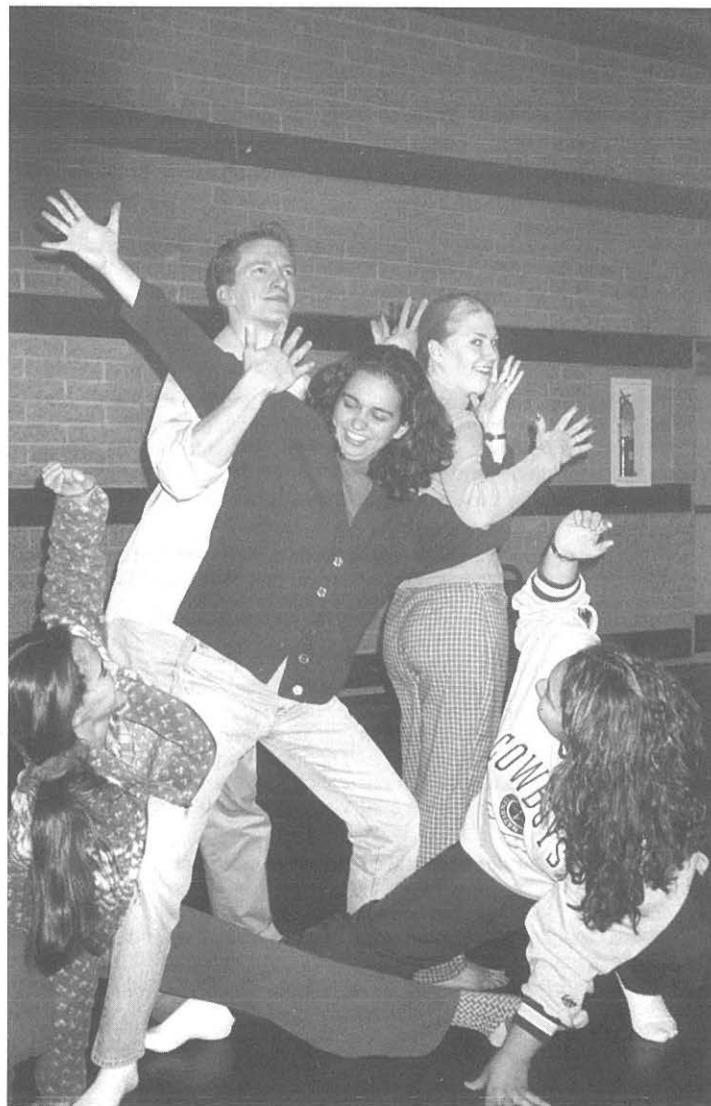
Prerequisite(s): None.

Survey of historical and contemporary causes of domestic violence. Includes the examination of abused populations: spouse, sibling, adult child-to-parent, children, and victims of dating violence. Also includes diagnosis, prevention, and treatment of domestic violence, and identification of and need for treatment programs.

**SSE 146 Child Abuse Intervention and Protection /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of the principles and methods of dealing with child abuse. Includes the many definitions and forms of child abuse, recognition of its symptoms, family dysfunctions, the interaction with and counseling of the parental abuser, and the utilization of available community resources. (Same as AJS 146.)



**SSE 150 Introduction to Eating Disorders /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

History, dynamics, prevalence, and treatment approaches to eating disorders. Includes anorexia nervosa, bulimia, and obesity. Also includes the history and background of attitudes toward these disorders and biological, psychoanalytic, behavioral, and other theoretical perspectives.

**SSE 151 Treatment Modalities for Eating Disorders /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Dynamics and approaches to the treatment of eating disorders. Includes diagnosis, psychological assessment, forms of intervention including psychotherapeutic, and clinical issues encountered in treatment.

**SSE 152 Medical Aspects of Eating Disorders /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the classification, epidemiology, and physiology of obesity, anorexia, compulsive overeating, and bulimia. Includes weight control and fad diets, endocrinology, psychopharmacology, and nutritional assessment. Also includes treatment and recovery.

**SSE 154 Nutrition /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet. (Same as FSN 154.)

**SSE 160 Introduction to Youth Services /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

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 the normal development needs of children and adolescents, the special needs of dependent, delinquent, challenged and special needs youth, roles of youth workers, and the need to focus on prevention through strengthening families and communities. Also includes a survey of local youth serving agencies. (Same as AJS 160.)

**SSE 190 Social Services Field Experience /4 cr. hrs./16 periods (1 lec., 15 lab)**

Prerequisite(s): SSE 112 and consent of instructor.

Supervised placement in community social services agencies. Includes classroom seminars which discuss pertinent theory and issues raised through the field experience. May be taken two times for a maximum of eight credit hours.

**SSE 191 Field Placement Gerontology I /4 cr. hrs./16 periods (1 lec., 15 lab)**

Prerequisite(s): SSE 110, 130.

Supervised placement in a gerontologic social service setting.

**SSE 198 Special Topics in Social Services: /1-6 cr. hrs./1-6 periods (1-6 lec.)**

Prerequisite(s): Consent of instructor.

Special topics in social services which reflect current issues, trends, and technologies. Credit may be earned for each topic taken.

**SSE 210 Community Organization and Development /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 110.

Principles and techniques of organizing to effect change. Includes role of the professional organizer, nature of institutions, causes of change or failure to change, and strategies for effective change.

**SSE 211 Group Technique Applications /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 111.

Application of advanced concepts in group dynamics. Includes skill development through in-class experiential learning and group facilitation. Also includes community-group case studies, ethical standards, and multicultural issues.

**SSE 212 Casework Methods II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 112.

Advanced techniques in interviewing, recording, client evaluation, case management, strategies for intervention, and special populations. Also includes the application of advanced skills through a variety of interviewing settings.

**SSE 214 Human Behavior in the Social Environment /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor, or PSY 101, SOC 101, and BIO 156 or 160.

Introduction to the interrelation of biological, psychological, sociological, and cultural systems and their effects on behavior as the basis for social work practice. Includes a focus on the development of children and youth in ethnic minority families of the southwest, and influences of the family, group, and culture in shaping human behavior.

**SSE 216 Social Policy and Services /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor, or ECN 202, POS 110, SSE 110, SSE 210.

History, philosophy, and values of social welfare policy as it interacts with social problems. Includes function and role of social welfare in society and development of the social work profession and practice.

**SSE 220 Treatment of the Substance Abuser /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 120. SSE 122 recommended.

Principles and techniques of treating the substance abuser. Includes therapeutic communities, day care programs, methadone maintenance, detoxification, and psychotherapy.

**SSE 222 Political and Legal Aspects of Drug Use /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 120. SSE 122 recommended.

Overview of drug abuse and the law. Includes the influence of politics, economics, civil liberties, court decisions, and public opinion. Also includes consideration of international trafficking, gangs, and money laundering.

**SSE 242 Crisis Intervention, Theory and Techniques /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 112 or consent of instructor.

Principles and practice of crisis intervention. Includes techniques of intervention, referrals, and diagnosis utilized in resolving crisis situations encountered in social service settings.

**SSE 260 Youth Services: Policy, Practice and Prevention /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SSE 160.

Principles and techniques of working with youth. Includes an examination of national, state and local policies which impact youth services, effective prevention strategies and how to implement them within the community, and practice skills necessary for working in a variety of youth service settings.

**SSE 290 Field Experience Youth Services /4 cr. hrs./16 periods (1 lec., 15 lab)**

Prerequisite(s): SSE 112, 160 and consent of instructor.

Supervised placement in community youth serving agencies. Includes classroom seminars which discuss pertinent theory and issues raised through the field experience. May be taken two times for a maximum of eight credit hours.

**SSE 291 Field Placement Gerontology II /3 cr. hrs./15 periods (15 lab)**

Prerequisite(s): SSE 191.

Continuation of SSE 191. Includes in-depth working relations with the elderly within a supervised placement.

**SSE 296 Independent Study in Social Services /1-3 cr. hrs./3-9 periods (3-9 lab)**

Prerequisite(s): Consent of instructor.

Advanced projects, research and learning in the social services. Content to be determined by conference between student and instructor. May be taken three times for a maximum of nine credits.

**SSE 298 Advanced Topics in Community Involvement /1-6 cr. hrs./1-6 periods (1-6 lec.)**

Prerequisite(s): Consent of instructor.

Direct, constructive student involvement in community problems. Includes working individually or in small teams through guidance and periodic consultations with faculty advisors. Also includes special activities to be determined by the advisors. Students employed or working as volunteers with agencies or groups may get credit for those activities under this course. (Same as SOC 298.)

**SOCIOLOGY****SOC 101 Introduction to Sociology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the basic concepts of sociology and sociological analysis with emphasis on group, status, personality, role, socialization, social processes, institutions, social organization, and social change.

**SOC 103 Explorations in Prejudice /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SOC 101.

Why we hate each other. What we, as participants in this course, do about our own prejudice and prejudice in the community.

**SOC 110 Introduction to Cities and Community Planning /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SOC 101.

Introduction to the study of the urban environment, including its history, structure and dynamics. Special emphasis on understanding the function of cities on the local level.

**SOC 120 Current United States Social Problems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): SOC 101.

Analysis of such forms of social disorganization as crime, mental illness and urban problems as they relate to modern American society. Problems are studied within the context of the international community.

**SOC 127 Marriage and the Family /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Functions of the family. Emphasis on relationships within the family and how they affect the development of individuals in the home and community. Part I-Background: Kinship, family styles and tradition, sexuality, parenthood, working partners and the family today and tomorrow. Part II-The Dialogue: Relationships. (Same as HEC 127.)

**SOC 166 Social Gerontology I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the bio-cultural and holistic study of aging, dying and death. The bio-social process of aging, factors in longevity and the social meaning of death.

**SOC 201 Minority Relations and Urban Society /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis of minority relations and urban society. Emphasis on minority socialization, social order and conflict and current social trends.

**SOC 203 Sociology of Utopia /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

An exploration of life in the ideal society. Includes alternative lifestyles and the history of the communal movement in America with special emphasis on the literature of Utopia and modern communal experimentation.

**SOC 204 Women in Society /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of the status of women in society. Includes the legal, social, economic, religious and psychological factors affecting their status.

**SOC 215 Human Sexuality /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of human sexual experience throughout the life cycle, viewed from sociological and psychological perspectives. (Same as PSY 215.)

**SOC 271 Social Psychology of Sport /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis of the relationship of sport to the social psychological principles of socialization, values, concentration, anxiety, aggression, motivation, team interactions, and peak performance. (Same as PSY 271.)

**SOC 273 Sociology of Sport /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Analysis of the impact of sport on society. Includes the relationship of sport to societal institutions: the economy, politics, education, family, religion, and the interrelationships between sport and the concepts of race, gender, and stratification. Also includes the examination of contemporary issues in sport including the economics of sport, ethics, gender equity, and the relationships between players, coaches, and fans.

**SOC 296 Individual Studies in Sociology /1-6 cr. hrs./1-6 periods (1-6 lec.)**

Prerequisite(s): Consent of instructor.

Exploration of special interest areas. Content to be determined by conference between student and instructor.

**SOC 298 Advanced Topics in Community Involvement /1-6 cr. hrs./1-6 periods (1-6 lec.)**

Prerequisite(s): Consent of instructor.

Direct, constructive student involvement in community problems. Includes working individually or in small teams through guidance and periodic consultations with faculty advisors. Also includes special activities to be determined by the advisors. Students employed or working as volunteers with agencies or groups may get credit for those activities under this course. (Same as SSE 298.)

**SPANISH**

**SPA 070 Spanish for Medical Personnel /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Conversational practice in a medical context. Designed to develop speaking and listening techniques essential for basic medical situations, stressing expressions of courtesy and medical terminology.

**SPA 103 Beginning Conversation I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

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.

**SPA 104 Beginning Conversation II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SPA 103.

Continuation of SPA 103. Includes oral and written communication, additional grammatical structures, additional interpersonal transactions, and additional cultural perspectives.

**SPA 110 Elementary Spanish I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Skill development to provide proficiency in basic communication (listening, speaking, reading and writing), emphasizing an examination of Spanish cultural traditions.

**SPA 111 Elementary Spanish II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SPA 110 or equivalent.

Continuation of SPA 110. Designed to provide increased proficiency in listening, speaking, reading and writing. Includes continued study of Spanish cultural traditions.

**SPA 201 Spanish for Native Speakers I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): Ability to speak Spanish.

Skill development designed to prepare native speakers for composition and Spanish literature courses through grammatical review, and comprehensive reading and writing in Spanish.

**SPA 202 Spanish for Native Speakers II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SPA 201.

Intensified continuation of SPA 201. Major emphasis on literature and grammar.

**SPA 210 Intermediate Spanish I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SPA 111 or two years of high school Spanish.

Continuation of SPA 111. Intensive review of grammar in addition to reading selected authors and writing short compositions. Emphasis on continued practice in speaking Spanish.

**SPA 211 Intermediate Spanish II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SPA 210.

Continuation of SPA 210. Intensive review of grammar in addition to reading selected authors and writing short compositions. Emphasis on efficient and contemporary language usage.

**SPA 230 Introduction to Literature in Spanish /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): SPA 102, 211.

Survey of literature written in Spanish. Designed to give students a broader knowledge of the language through literature selected from representative Spanish, Latin American and Chicano writers.

**SPA 296 Independent Study in Spanish /1-4 cr. hrs./1-4 periods (1-4 lab)**

Prerequisite(s): Consent of instructor.

Independent Spanish readings or other projects under the supervision of an instructor. May be taken two times for a maximum of eight credit hours.

**SPA 297 Spanish Language Seminar: / .25-4 cr. hrs./ .25-4 periods (.25-4 lec.)**

Prerequisite(s): Consent of instructor.

Spanish language related training. Includes presentations and development of skills in a given area, and topics of timely or limited interest.

**SPEECH COMMUNICATION****SPE 102 Introduction to Oral Communication /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the function, basic concepts, and skills of oral communication in interpersonal and public address situations. Includes listening, communication styles, communication barriers, and methods to help eliminate barriers.

**SPE 105 Voice and Diction /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Study and training in basic voice production. Includes proper breathing techniques, sound production, kinesics, general speech standards, common voice problems, and methods to overcome problems.

**SPE 110 Public Speaking /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study and training in public speaking and audience adaptation. Includes developing skills in the areas of research, logic, analysis, organization, and delivery.

**SPE 120 Business and Professional Communication /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study and training in communication within work situations. Includes oral reports, interviewing, persuasion, listening, and group problem-solving and decision-making.

**SPE 124 Argumentation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and practice of argumentation. Includes basic forms of analysis, evidence, proof, reasoning, and refutation.

**SPE 125 Forensics /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Individualized instruction and practice in speech competition/public performance skills. Includes oral interpretation, readers' theatre, and informative, persuasive, extemporaneous, and impromptu speaking. Student must participate in at least one intercollegiate speech tournament/public performance. May be taken four times for a maximum of four credit hours.

**SPE 130 Small Group Discussion /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study and training in group process. Includes the nature and functions of groups, norms of group participation and interaction, and group leadership. Also includes a special focus on communication in group decision-making.

**SPE 136 Oral Interpretation of Literature /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Study and training in the oral presentation of literature. Includes literary conventions, analysis techniques, role of the interpreter, use of voice and body,



characterization, and oral interpretation modes. Also includes a special focus on analyzing and experiencing literature as human discourse.

**SPE 296 Independent Study in Speech /1-4 cr. hrs./1-4 periods (1-4 lec.)**

Prerequisite(s): Six credit hours in speech.

Under individual guidance of an instructor, student researches an aspect of communication not available through regular course offerings.

## TECHNOLOGY

**TEC 098 Topics in TEC: / .25-4 cr. hrs./ .25-13 periods (.25-4 lec., 0-9 lab)**

Prerequisite(s): None.

Topics in technology which reflect current issues and trends.

**TEC 101 Principles of Technology I /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): TEC 111 or consent of instructor.

Introductory experimentation and study of applied mechanical, fluid, electrical, and thermal systems. Includes the physical constructs of force, work, rate, resistance, energy, power, and force transformation.

**TEC 101A Principles of Technology IA /2 cr. hrs./4 periods (1 lec., 3 lab.)**

Prerequisite(s): None.

Introductory experimentation and study of applied mechanical, fluid, electrical, and thermal systems. Includes the physical constructs of force, work, rate, and resistance.

**TEC 101B Principles of Technology IB /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): TEC 101A or consent of instructor.

Continuation of TEC 101A. Includes experimentation and study of applied mechanical, fluid, electrical, and thermal systems within the physical constructs of energy, power, and force transformation.

**TEC 102 Principles of Technology II /4 cr. hrs./8 periods (2 lec., 6 lab)**

Prerequisite(s): TEC 101 or consent of instructor.

Continuation of TEC 101. Includes experimentation and study of applied momentum, waves, and vibrations. Also includes transient responses to physical stimuli, energy convertors and transducers, electromagnetic and nuclear radiation, light, and optical systems.

**TEC 103 Light and Optical Systems /1 cr. hr./2 periods (1 lec., 1 lab)**

Prerequisite(s): MAT 113.

Introduction to light and optical systems used in photolithographic processes and equipment in semiconductor manufacturing. Includes principles, terminology, and components used in basic optical systems.

**TEC 111 Applied Math I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to numerical operations in measurement and systems of units. Includes geometric figures, waveshapes, scale drawings, collection of data, display of data, and data calculations. Also includes basic algebraic and numeric expressions, scientific notation, and instruction on using the hand-held calculator.

**TEC 111A Applied Math I - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Module A constitutes approximately the first one-third of TEC 111.

**TEC 111B Applied Math I - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): TEC 111A.

Module B constitutes approximately the second one-third of TEC 111.

**TEC 111C Applied Math I - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): TEC 111B.

Module C constitutes approximately the third one-third of TEC 111.

**TEC 112 Applied Math II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TEC 111 or MAT 092 or satisfactory score on the mathematics assessment test.

Continuation of TEC 111. Includes linear equations, functional notation, quadratic equations, logarithms, complex numbers, and basic analytic geometry. Also includes many examples and exercises pertaining to electrical, magnetic, fluidic, thermal, mechanical, and chemical systems.

**TEC 112A Applied Math II - Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): TEC 111 or MAT 092 or satisfactory score on the mathematics assessment test.

Module A constitutes approximately the first one-third of TEC 112.

**TEC 112B Applied Math II - Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): TEC 112A.

Module B constitutes approximately the second one-third of TEC 112.

**TEC 112C Applied Math II - Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): TEC 112B.

Module C constitutes approximately the third one-third of TEC 112.

**TEC 113 Mathematics with Trigonometry and Statistics /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 122 or TEC 112 or satisfactory score on the mathematics assessment test.

Non-linear and simultaneous equations used in network analysis. Includes basic trigonometry and complex numbers used in AC circuit theory and optics, waveforms and methods of description, basic probability and statistics used in statistical process control and metrology, introductory periodic



waveform analysis, and graphical presentations of special sums and rates of change in linear circuit applications. (Same as MAT 113.)

**TEC 121 Basic Electric and Magnetic Properties /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 101 and 112, or consent of instructor.

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.

**TEC 121A Basic Electric and Magnetic Properties: Module A /2 cr. hrs./3 periods (1.5 lec., 1.5 lab)**

Prerequisite(s): TEC 101 and 112, or consent of instructor.

Module A constitutes approximately the first one-half of TEC 121.

**TEC 121B Basic Electric and Magnetic Properties: Module B /2 cr. hrs./3 periods (1.5 lec., 1.5 lab)**

Prerequisite(s): TEC 121A

Module B constitutes approximately the second one-half of TEC 121.

**TEC 122 Applied Semiconductor Devices /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAT 113, TEC 121 and 151.

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.

**TEC 123 Digital Circuits and Computers /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 101 or consent of instructor.

Introduction to the theory, operation, and application of digital components used in combinational and sequential logic. Includes memory, error detection, convertors, and basic microprocessors. Also includes digital test equipment, measurements, tests on digital components and circuits, technical data, applications notes, specifications for digital components, and microprocessor applications.

**TEC 124 Modern Electronic Communications /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): MAT 113, TEC 121 and 151, or consent of instructor.

Co-requisite(s): Concurrent enrollment in TEC 122 recommended.

Introduction to electronic communication circuits and methodologies in transmitters and receivers. Includes construction, measurement, and troubleshooting of modern electronic communications circuits and components. Also includes safety and FCC regulations.

**TEC 125 AC Networks with Phasors /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): MAT 113, TEC 121, 151.

Applications of trigonometry and the algebra of complex numbers to AC circuit 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.

**TEC 126 Electronics Construction and Assembly /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MAT 113, TEC 121.

Basic skills required to work on electronic equipment. Includes assembly techniques, soldering and desoldering, printed circuit board fabrication, wire wrapping and cable construction. Also includes discussion of machine shop and power tools.

**TEC 127 Printed Circuit Board Solder Assembly /3 cr. hrs./5 periods (1 lec., 4 lab)**

Prerequisite(s): None.

Procedures and skills required for assembling components and for high reliability soldering of these components on printed circuit boards to appropriate military specifications. Includes defect recognition, component preparation, component recognition, installation and high reliability soldering of these components to a printed circuit board. (Same as MRE 125.)

**TEC 128 Electronic Measurements /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): TEC 122, 125, 171.

Techniques to perform AC and DC measurements on passive and active component circuits. Includes the use of a variety of measuring devices such as recorders, transducers, audio and radio frequency generators, frequency counters, spectrum analyzers, distortion analyzers, with emphasis on oscilloscope operation.

**TEC 130 Microcomputer Assembly and Testing /4 cr. hrs./5 periods (3 lec., 2 lab)**

Prerequisite(s): TEC 101 or 101B or consent of instructor.

Microcomputer system assembly, set-up, and start-up. Includes building a personal computer, installing the circuit boards, power supply, and disk drives. Also includes system testing and trouble shooting, configuring for different operating systems, tools and equipment safety, use of diagnostic and support software, peripheral connections, and component replacement. (Same as ETR 130.)

**TEC 132 Microcomputer Systems Servicing /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 130, 160.

Servicing microcomputers, peripherals and software. Includes determining the operational status of monitors, printers, floppy disk drives, hard drives, installed operating systems, and application software.

**TEC 151 Information Transfer in Technology /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Information transfer in metrology, data collection, data description, and analysis. Includes the representation of systems and processes, an introduction to components, symbols, and diagrams. Also includes the description of equipment and parts, the use of technical information sources, methods of troubleshooting, technical note-taking and technical telephone/computer communications.

**TEC 160 Microcomputers and Programming Techniques /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): MAT 092 or TEC 111 or consent of instructor.

Introduction to microcomputer operation. Includes terminology, reading and understanding specifications, system start up, disk operations, programming simple electronic problems. Also includes an introduction to assembly language and number systems.

**TEC 170 Foundations of Improvement Technology /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 092 or TEC 111 or satisfactory score on the mathematics assessment test.

Statistical thinking, systems thinking, psychology, and theory of knowledge for the continuous improvement of processes in technician training and work. Includes team dynamics, introductory control charting, and basic design of experiments concepts. Also includes techniques for teams to identify and prioritize improvement opportunities, represent and analyze important processes, and identify feasible routes to achieve improvement and excellence in technical training and work.

**TEC 171 Statistical Process Control and Experimentation /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): MAT 113, TEC 170.

Basic statistical control and experimentation for technicians. Provides tools for representing processes, methods for data collection, statistical data-descriptive devices, control charting, capability analyses, and elementary statistical experimental designs. Includes use of calculator and quality software.

**TEC 182 Fundamentals of Semiconductor Manufacturing Chemistry and Safety /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Fundamentals of chemistry with emphasis on chemical safety in the semiconductor manufacturing workplace. Includes chemical principles, calculations, terminology, uses of chemicals, types of hazards, safeguards, regulations, and basic first aid.

**TEC 198 Special Topics in Technology: /1-4 cr. hrs./1-16 periods (1-4 lec., 3-12 lab)**

Prerequisite(s): Consent of instructor.

Special topics in technology which reflect current issues and trends. Credit may be earned for each topic taken.

**TEC 221 Linear Devices /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): TEC 122, 125.

Linear devices in electronic systems. Includes operational amplifiers, measurement, specification, selection, troubleshooting, and theory of linear devices. Also includes power requirements and the means to obtain necessary power.

**TEC 222 Electromechanical Devices and Systems /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 122, 125.

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.

**TEC 225 Fluid Devices and Automated Systems /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): TEC 123, 160.

Application and control of fluid devices using programmable logic devices. Includes microprocessors, software, ladder logic and diagrams, programmable logic controllers (PLCs), and a 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.

**TEC 226 Integrated Systems in Semiconductor Manufacturing /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 221, 222, 225, 272, and 273 and 274 or concurrent enrollment.

Integration of chemical, computer, electronic, electromechanical, fluidic, and optical components to duplicate or simulate systems in the semiconductor manufacturing workplace. Includes process analysis, technical communications, metrology and data collection, statistics, troubleshooting and team problem solving, safety, statistical process control and experimental design, system assembly, reliability, test, and cleanroom procedures.

**TEC 227 Communication and Information Transmission Systems /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 122, 124, 125, 171. TEC 123 recommended.

Introduction to electronic communications and information transmission. Includes technical properties, components, sub-systems, specifications,

adjustment, operation, maintenance, and troubleshooting of cable, RF point-to-point, laser, fiber, satellite, transponder, cellular, and computer systems.

**TEC 228 RF and Microwave Devices /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 221, 222, 227.

Properties, applications, measurements, and specifications of electronic communications components and systems at RF and microwave frequencies. Includes antennas, transmitting and modulating devices, interconnecting systems, antennas, satellite transceiving devices, and cellular telephone configurations.

**TEC 229 Integrated Systems in Telecommunications /4 cr. hr./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 221, 222, 227, 228 or concurrent enrollment.

Overview of communications. Includes systems specifications, the ordering of materials, installation, operation, inventory, maintenance, repair, and documentation.

**TEC 230 Peer-To-Peer Networking /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 132 or consent of instructor.

Introduction to basic networking concepts. Includes network topologies, configuration, protocols, and technologies. Also includes inter-networking concepts and experiential learning.

**TEC 232 Dedicated Server Networks /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 230.

Dedicated file server networking technology using industry standard network operating systems. Includes installation, setup, administration, setting of network interface card, interrupts, I/O base address, and memory configurations. Also includes using technical literature to make user accounts, directories, permissions, printer servers, printer queues, printer definitions, printer configurations, and remote printing.

**TEC 234 Microcomputer Repair /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): TEC 122, 123, 124, 125, and 132.

Repair and replacement of microcomputer components. Includes microprocessors and system architecture. Also includes tools, test equipment, handshaking, and troubleshooting.

**TEC 235 Survey of Networks and Operating Systems /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): TEC 132.

Survey of computer, networks, and operating systems including DOS, OS/2, VMS, UNIX, peer-to-peer and client/server network operating systems (NOS). Includes topics on network topologies, protocols, and transmission media. Also includes topics on distributed operating systems.

**TEC 236 Underpinnings of the Internet /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): TEC 160.

Introduction to the Internet and its services. Includes topics on the structure, operation, and physical components of the network. Also includes differences due to variations in server operating systems.

**TEC 237 Contemporary Client/Server Computing /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): TEC 232, 235.

Introduction to client/server computing from the ground up. Includes topics on client/server models, operating systems, network operating systems (NOS), and middleware, database servers, and groupware.

**TEC 238 Information Acquisition and Professional Advancement /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TEC 232, 235, 236, 237 or concurrent enrollment.

Locating information pertaining to systems networking standards and protocols. Includes costs, information technologies, operating systems, transmission methods, networking equipment, and management. Also includes methods of storing, retrieving, archiving, disseminating, and destroying unnecessary or obsolete information.

**TEC 250 Digital Devices /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 122, 123.

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.

**TEC 251 Analog Circuits /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 250 or concurrent enrollment, and TEC 221.

Advanced analog circuits used in current digital systems. Includes power supplies, power failure, surge protection, and power amplifiers.

**TEC 255 Microprocessor I /4 cr. hrs./6 periods (3 lec., 1 lab)**

Prerequisite(s): TEC 160 and 250 or concurrent enrollment.

Microcomputer operation, including operating systems, diagnostics, system, monitor, assemblers, linking loaders and backup procedures. Also includes machine language, assembly language and subroutine calls from higher level languages.

**TEC 256 Microprocessor II /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TEC 255.

In-depth study of microcomputer hardware to the component level. Includes microprocessors, bus structure and timing, memory, input-output, interrupt, DMA and troubleshooting.

**TEC 272 Semiconductor Manufacturing Processes I /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): TEC 103, 171, 182.

Study of semiconductor manufacturing. Includes crystal growth, wafer preparation, wafer fabrication, oxidation, diffusion and ion implantation with attention to affiliated processes, equipment, materials, key concepts, measurements, safety, contamination control, tests, and terminology.

**TEC 273 Semiconductor Manufacturing Processes II /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): TEC 272.

Continuation of TEC 272. Includes photolithography (photomasking and etching), deposition, packaging, wafer test, evaluation, and process yields with attention to affiliated processes, equipment, materials, key concepts, measurements, safety, contamination control, tests, and terminology.

**TEC 274 Vacuum Systems and Power RF /3 cr. hrs./4 periods (2 lec., 2 lab)**

Prerequisite(s): TEC 122, 125, 182, 225.

Basic gas laws, theory, definitions, and applications of power RF in manufacturing industries, particularly semiconductor manufacturing. Includes pumps, vacuum gauges, measurement, lead detection, safety in high vacuum environments, troubleshooting, and RF generation and transmission. Also includes materials and components, plasmas, plasma etching systems, cleaning and other vacuum lab procedures.

**TEC 289 General Radio/Telephone FCC License /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): TEC 230 or equivalent experience.

Preparation for FCC general radio/telephone certificate examination. Includes review of electronic circuit analysis, basic radio theory, laws and regulations.

**TEC 290 Technology Education Field Experience /1-6 cr. hrs./ 5-30 periods (5-30 lab)**

Prerequisite(s): Consent of instructor.

Participation in a high technology placement to provide experience in the practical application of classroom instruction. Includes practical experience, observation of business practices, job skills preparation, and an emphasis on work-place behaviors. May be taken two times for a maximum of six credit hours.

**TEC 298 Advanced Topics in Technology: /1-4 cr. hrs./1-10 periods (1-4 lec., 0-9 lab)**

Prerequisite(s): None.

Advanced topics in technology which reflect current issues and trends. Credit may be earned for each topic taken.

**THEATER****THE 103 Voice and Movement for the Actor I /1 cr. hr./2 periods (2 lab)**

Prerequisite(s): None.

Principles and practice of beginning voice and movement skills for the actor. Includes phonetics, physical isolation and awareness exercises. May be taken two times for a maximum of two credit hours.

**THE 104 Voice and Movement for the Actor II /1 cr. hr./2 periods (2 lab)**

Prerequisite(s): THE 103.

Continuation of THE 103. Includes development and practice of stage dialects and physicalization of character. May be taken two times for a maximum of two credit hours.

**THE 107 Introduction to Pantomime /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Development of theater skills through the language of mime. Includes technique and vocabulary necessary to articulate thought process by means of body dynamics.

**THE 110 Movement/Dance for Actors /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Physical dynamics of actor training. Includes warm-up and relaxation techniques, text and scene analysis through movement and an introduction to dance and movement traditions of musical theater.

**THE 111 Stagecraft /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Principles of the operation and effects of various types of stages and stage scenery. Includes the construction of stage scenery and the history and construction of costumes and properties.

**THE 112 Stagecraft Laboratory /1 cr. hr./3 periods (3 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in THE 111 and 113.

Practical application of techniques for constructing stage scenery and properties. Includes uses of various materials, construction of flats, steps and platforms, and rigging systems. May be taken three times for a maximum of three credit hours.

**THE 113 Stagecraft Crew /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in THE 111 and 112.

Preparing, organizing, setting up, running and shifting of theatrical sets, properties and costumes for approved theatrical productions. May be taken three times for a maximum of three credit hours.

**THE 115 Make-up /1 cr. hr./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

Principles and practice of straight and character make-up under various conditions. Includes special effects, masks, clown make-up and fantasy make-up.

**THE 118 Basic Theater Graphics /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): None.

Principles and practice of graphic skills necessary in the planning of theatrical productions. Includes drafting and mechanical drawing, perspective drawing, and watercolor painting techniques.

**THE 140 History of Theater I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of theater, drama and audiences from its origins to the late 18th century. Includes changes in theaters, stages and theatrical conventions, and representative plays from each period.

**THE 141 History of Theater II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Survey of theater, drama and audiences from the 18th century to the present. Includes changes in theaters, stages and theatrical conventions, and representative plays from each period.

**THE 149 Introduction to Acting I /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Introduction to performance techniques and the development of physical skills for effective performance. Includes techniques of acting and characterization.

**THE 151 Introduction to Acting II /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): THE 103 or concurrent enrollment, and THE 149.

Continuation of THE 149. Includes methods of developing and projecting a character's physical scope, emotional inner life, and the employment of sub-text (unspoken thoughts) in performances. Also includes techniques for character and script analysis.

**THE 198 Special Topics in Theater: /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Special topics in theater which reflect current issues and trends. Credit may be earned for each topic taken.

**THE 220 Stage Lighting /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in THE 221 and 222.

Principles of stage lighting design and practice. Includes study of stage lighting, instruments and their capabilities, construction, and uses in various theatrical applications.

**THE 221 Stage Lighting Laboratory /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in THE 220 and 222.

Practical application of stage lighting techniques. Includes mounting, hanging and focusing from design, adjustments and repair of instruments, organizing and operation of control systems, and safety practices. May be taken three times for a maximum of three credit hours.

**THE 222 Stage Lighting Crew /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): None.

Co-requisite(s): Concurrent enrollment in THE 220 and 221.

Organizing, setting up and operating of stage lighting for approved theatrical productions. May be taken three times for a maximum of three credit hours.

**THE 223 Scene Design /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): THE 118.

Co-requisite(s): Concurrent enrollment in THE 224 and 225.

Principles of scene design for various types of stage and models of productions. Includes ground plans, color design, painting techniques, and uses of plastic materials and fabric design.

**THE 224 Scene Design Laboratory /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): THE 118.

Co-requisite(s): Concurrent enrollment in THE 223 and 225.

Practical application of scene design techniques. Includes base and paint application in various styles, mixing and blending of painting materials and forming and mounting set decorations. May be taken three times for a maximum of three credit hours.

**THE 225 Scene Design Crew /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): THE 118.

Co-requisite(s): Concurrent enrollment in THE 223 and 224.

Planning, painting, and decorating stage settings for approved theatrical productions. May be taken three times for a maximum of three credit hours.

**THE 245 Principles of Dramatic Structure /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Examination of the structural elements of major dramatic forms and styles. Includes reading and viewing of representative plays and analysis of their structures in relationship to modes of presentation and the resulting effects.

**THE 250 Intermediate Acting I /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): THE 103 and 112 or concurrent enrollment, and THE 149.

Theory and practice of creating sustained and logical character portrayals using all types of dramatic literature from various cultures. Includes rehearsal and performances of scenes in representational and presentational styles and practice in auditioning techniques.



**THE 251 Intermediate Acting II /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): THE 104 and 112 or concurrent enrollment, and THE 151 or 250.

Continuation of THE 250. Includes scene and monologue development and focusing on conventions of non-realistic styles.

**THE 296 Independent Studies in Theater /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): None.

Students work at various assigned tasks in theatrical productions under the guidance of an instructor. Includes the opportunity for the student to design his/her own project with the instructor's approval.

**TOHONO O'ODHAM**

**THO 050 Conversational Tohono O'odham I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Designed for persons with no previous knowledge of Tohono O'odham. Primary focus on listening to and speaking elementary Tohono O'odham.

**THO 051 Conversational Tohono O'odham II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): THO 050 or equivalent.

Designed for persons able to ask and respond to simple questions relevant to self and to the environment.

**THO 110 Elementary Tohono O'odham I /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Skill development to provide proficiency in basic communication (listening, speaking, reading, and writing), emphasizing an examination of Tohono O'odham cultural traditions.

**THO 111 Elementary Tohono O'odham II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): THO 110.

Continuation of THO 110. Designed to provide increased proficiency in listening, speaking, reading, and writing. Includes continued study of Tohono O'odham cultural traditions.

**TRAINING FOR SPECIAL EDUCATION**

**TSE 101 Orientation to the Exceptional Child /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Introduction to the physical and mental characteristics of children in special education. Includes disability categories such as mental retardation, emotionally handicapped, hearing and visually impaired, orthopedically impaired, traumatic brain injury, autism, and multiple handicapped. Also includes a historical perspective, future populations, and laws that impact special education.

**TSE 105 Techniques for Working with Developmentally-Disabled People /2 cr. hrs./3 periods (1 lec., 2 lab)**

Prerequisite(s): None.

Basic skills and knowledge for the entry-level habilitation technician. Includes the basic characteristics of mental retardation, epilepsy, cerebral palsy and autism; safety procedures related to client activities; intervention techniques; and the continuum of services available to clients.

**TSE 130 Techniques for Teaching Students with Multiple Disabilities /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Techniques for designing and implementing functional programs for students with multiple disabilities. Includes appropriate tasks and materials, behavior control, adaptive equipment, and therapeutic motor training.

**TSE 132 Behavior Modification Techniques for Special Education I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Behavior theories and strategies for changing inappropriate behavior through the use of positive reinforcement principles. Includes data collection, principles of reinforcement, schedules of reinforcement, token economies, contracts, modeling, generalization, and program evaluation.

**TSE 142 Special Speech and Language Techniques /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of speech and language disorders and their remediation. Includes components involved in normal speech and language development.

**TSE 150 Behavior Modification Techniques for Special Education II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TSE 132.

Continuation of TSE 132. Methods of changing inappropriate behavior through the use of behavior modification techniques, including positive, extinction and aversive contingency systems.



**TSE 198 Special Topics in Special Education / .5-4 cr. hrs./5-12 periods (0-4 lec., 0-12 lab)**

Prerequisite(s): None.

Special topics in special education for classroom instruction. Includes current specialized materials to meet classroom needs for local educators and classroom aides. Credit may be earned for each topic taken.

**TSE 240 Techniques for Teaching Students with Mental Retardation / 3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Techniques and procedures for teaching students with mental retardation. Includes definitions of the educable/trainable mentally retarded person, etiologies, characteristics, and educational methodologies and teaching techniques.

**TSE 245 The Young Child with Disabilities /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Causes, characteristics, and intervention techniques for children with disabilities (birth through five). Includes characteristics and stages of learning of the normal child and the identification and educational programming for the child with disabilities.

**TSE 255 Characteristics of Behavioral Disorders /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of techniques and procedures for teaching students who display behavioral disorders. Includes evaluation strategies and intervention models for managing behaviors.

**TSE 265 Adaptive Technology in Special Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of mechanical and electrical adaptive devices and their application with special needs students. Teaches and facilitates communication, self-help skills and environmental control independence.

**TSE 298 Issues and Trends in Special Education /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Exploration of current issues and trends in special education which impact the education of special needs students. Includes laws that impact special education, least restrictive environment, disciplinary measures, court cases, categorical issues, graduation, extended school year, school health concerns, preschool requirements, transition services, and community trends.

**TRAINING IN BEHAVIORAL HEALTH**

**TBH 198 Special Topics in Behavioral Health Education / .25-4 credit hours/.25-12 periods (0-4 lec., 0-12 lab)**

Prerequisite(s): None.

Customized course to meet the continuing training needs of individuals in the behavioral health field. Includes topics which reflect current issues, trends, and technologies.

**TBH 298 Special Advanced Topics in Behavioral Health Education / .25-4 credit hours/.25-12 periods (0-4 lec., 0-12 lab)**

Prerequisite(s): None.

Customized course to meet the continuing training needs of individuals in the behavioral health field. Includes advanced topics which reflect current issues, trends, and technologies.

**TRANSLATION STUDIES**

**TRS 101 Introduction to Translation /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Principles and procedures for the translation of written materials. Includes an introduction to translation, translation preparation, translation procedures, basics of grammar in the target languages English and Spanish, translator ethics and protocol, legal/quasi-legal translation, business/commercial translation, literary translation, and health care translation.

**TRS 102 Spanish for Translation /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Analysis of the Spanish language from the translator's point of view. Includes the structure of Spanish, cultural and stylistic components, paragraph and document development, mechanics and punctuation for editing, and writing resources.

**TRS 103 English for Translation /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): None.

Analysis of the English language from the translator's point of view. Includes the structure of English, cultural and stylistic components, paragraph and document development, mechanics and punctuation for editing, and writing resources.

**TRS 120 Technology for Translation /4 cr. hrs./6 periods (3 lec., 3 lab)**

Prerequisite(s): TRS 101, CSC 105 or computer applications experience.

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 Internet, and applied projects.

**TRS 150 Survey of Translation Specialty Areas /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): TRS 102, 103.

Introduction to the translation specialty areas of health care, legal, literary, and commercial/business. Includes introduction to specialty areas, types of documents, elements and characteristics of specialty documents, resource development, ethical and legal restrictions, and development of translation subskills.

**TRS 160 Translation in Specialty Areas /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): TRS 120, 150.

Principles and procedures for translating specialty area materials. Includes health care, legal, commercial/business, and literary translation exercises.

**TRS 250 Practicum in Specialty Area Translation /4 cr. hrs./16 periods (1 lec., 15 lab)**

Prerequisite(s): TRS 160.

Engaging in a specialty area internship to produce a translated product. Includes agency/individual sponsor, internship goals, portfolio project, and on-site or supervised training.

**TRS 297 Translation Studies Seminar: /.25-4 cr. hrs./25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Translation studies job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**TRAVEL INDUSTRY OPERATIONS**

**TVL 101 Introduction to the Travel Industry /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Major components of travel products and careers. Includes travel industry and hospitality products, distribution of the travel product, and careers in the travel industry.

**TVL 102 Computerized Reservation Systems I /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Basic software training. Includes screen management, passenger name record (PNR), Sabre's FOX, PNR modifications, faring/pricing the completed PNR, booking and pricing hotels and rental cars.

**TVL 103 Geography for Travel Professionals I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of major tourist destinations. Includes physical geography, and North and South America.

**TVL 104 Geography for Travel Professionals II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Examination of major tourist destinations. Includes physical geography, Europe, Africa, Asia and Oceania.

**TVL 109 Survey of Leisure Products /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): None.

Leisure travel components. Includes hotels, rental cars, AMTRAK, tours, and cruise accommodations.

**TVL 120 Leisure and Society /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Overview of recreation and leisure, and their role in contemporary society. Includes the history of leisure and work, theoretical perspectives, contemporary factors affecting leisure and play, ethics, conceptualizing leisure, role of leisure and recreation in society, and leisure services as a profession. (Same as REC 120.)

**TVL 121 Travel Sales /3 cr. hrs./4 periods (3 lec., 1 lab)**

Prerequisite(s): TVL 109.

Sales techniques in the travel industry. Includes phone and listening skills, sales techniques, client behavior styles, closing the sale, legal aspects of the travel industry, and outside sales.

**TVL 199 Co-op Related Class in TVL /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Concurrent enrollment in 199 Co-op Work, and a minimum of 12 credit hours of Travel Industry (TVL) courses or one year of related work experience.

See Cooperative Education section for description.

**TVL 199 Co-op Work in TVL /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): Concurrent enrollment in 199 Co-op Related Class, and a minimum of 12 credit hours of Travel Industry (TVL) courses or one year of related work experience.

See Cooperative Education section for description.

**TVL 203 Computerized Reservation Systems II: Fares and Ticketing / 3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): TVL 102.

Continuation of TVL 102. Includes advanced pricing, supplier pricing, ticketing, and Sabre's TIMATIC function.

**TVL 205 Tourism Marketing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TVL 101.

Concepts of hospitality and travel marketing. Includes consumer behavior, research and environment, strategies, and marketing elements.

**TVL 210 Leisure Delivery Systems /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): REC/TVL 120.

Introduction to development, management, and organization of the leisure services profession. Includes the significance of leisure and tourism in society, leisure and tourism as a profession, delivery systems, and organizational management. (Same as REC 210.)

**TVL 211 Tour Group Development, Sales and Management /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TVL 101 and/or one year of experience working in the hospitality-tourism industry.

Development, management and marketing of tours. Includes sales techniques, packaging, tour-guide skills and relationships with other destination services.

**TVL 214 Destination Development /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TVL 101 and 205 or concurrent enrollment.

Principles of tourism planning. Includes demographics, supply components, infrastructure, superstructure and hospitality resources, marketing, planning, and tourism demand components.

**TVL 250 Leadership in Recreation and Tourism /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Principles and strategies of leadership as applied to recreational and tourism settings. Includes leisure services, leadership, planning and evaluation, and communication skills. (Same as REC 250.)

**TVL 290 Field Work /3-6 cr. hrs./15-30 periods (15-30 lab)**

Prerequisite(s): Consent of instructor.

Field experience providing the opportunity to apply course work in a planned and supervised recreational or tourism setting. May be taken two times for a maximum of six credit hours. (Same as REC 290.)

**TVL 296 Independent Study in Travel/Tourism /1-3 credits/1-3 periods (1-3 lec.)**

Prerequisite(s): Consent of instructor.

Independent studies projects or special interest areas in travel/tourism. Content to be determined jointly between student and instructor. May be taken three times for a maximum of nine credit hours.

**TVL 297 Travel Industry Seminar: /.25-4 cr. hrs./25-16 periods (.25-4 lec., 25-12 lab)**

Prerequisite(s): Consent of instructor.

Travel industry job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**TVL 299 Co-op Related Class in TVL /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): Concurrent enrollment in 299 Co-op Work, and a minimum of 15 credit hours of Travel Industry (TVL) courses or one year of related work experience.

See Cooperative Education section for description.

**TVL 299 Co-op Work in TVL /1-8 cr. hrs./5-40 periods (5-40 lab)**

Prerequisite(s): Concurrent enrollment in 299 Co-op Related Class, and a minimum of 15 credit hours of Travel Industry (TVL) courses or one year of related work experience.

See Cooperative Education section for description.

**TRIBAL GOVERNMENT****TRB 101 Tribal Law I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Legal problems specific to American Indians and tribes. Includes the nature and scope of Indian law, federal Indian law, and policy, the special federal-tribal relationship, Indian tribal governments, Indian tribal sovereignty, and the jurisdictional framework in Indian country.

**TRB 102 Tribal Law II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): TRB 101.

Legal problems special to American Indians and tribes. Includes criminal, civil, tax, and regulatory jurisdiction in Indian country, rights of individual Indians, tribal economic development and Indian water, and fishing, and hunting rights.

**WELDING****WLD 110 Basic Arc and Oxyacetylene Welding /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): None.

Procedures and techniques in arc and oxyacetylene welding. Includes health, safety, and environmental practices, welding terminology, arc and oxyacetylene welding equipment, oxyacetylene flame cutting, proper welding procedures for arc and oxyacetylene, arc and oxyacetylene steel welding, welding machines and polarities, filler metal identification, and welding positions.

**WLD 115 Blueprint Reading/Estimating /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): MAT 082.

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 and specifications, labor, structural steel systems, and steel fabrication checklist.

**WLD 119 Pattern Layout for Pipe Fabrication /3 cr. hrs./5 periods (2 lec., 3 lab)**

Prerequisite(s): MAT 082 or satisfactory score on math assessment.

Pattern layout techniques for pipe welding. Includes drawing equipment, basic mathematic concepts, parallel, radial, and triangulation line development, and special problems.

**WLD 150 Oxyacetylene Welding /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): None.

Set up, procedures, and operation of oxyacetylene welding equipment. Includes safety, mild steel welding, equipment, joints, flame cutting, pipe and braze welding, expansion and contraction, hardfacing, cast and galvanized iron, stainless steel and silver soldering.

**WLD 160 Arc Welding /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): None.

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, power sources, carbon arc cutting, filler metal selection, hard facing, and metal identification.

**WLD 161 Plate Certification Welding /2 cr. hrs./4 periods (1 lec., 3 lab)**

Prerequisite(s): WLD 150 and 160, or two years of equivalent experience in all-position welding.

Advanced procedures in test plate welding certification using the American Welding Society Code D1.1. Includes preparation, assembly, defects and limitations of test plates. Also includes types of tests given and their period of effectiveness.

**WLD 250 Pipe Welding /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): WLD 119, 150, 160.

Principles and techniques of pipe welding. Includes classifications on performance testing, types of pipe, methods and preparation of pipe and miter joints, methods of joining, and preparation and methods of welding test plate.

**WLD 261 Gas Metal Arc Welding /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): WLD 150, 160.

Procedures and techniques in Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) processes. Includes health, safety, and environmental practices, welding terminology, GMAW and FCAW processes and equipment,

equipment operation and welding techniques, power source and wire feed types and controls, welding currents and polarities, welding wires in GMAW and FCAW processes, shielding gases, and mild steel and aluminum welding.

**WLD 262 Gas Tungsten Arc Welding /4 cr. hrs./6 periods (2 lec., 4 lab)**

Prerequisite(s): WLD 150, 160.

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.

**WLD 297 Welding Seminar: /.25-4 cr. hrs./ .25-16 periods (.25-4 lec., .25-12 lab)**

Prerequisite(s): Consent of instructor.

Welding job-related training. Includes presentations and development of skills in a given area and topics of timely or limited interest.

**WRITING****WRT 040 Basic English /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Development of skills necessary to prepare for and pass the General Education Development (GED) writing test, which is a part of the High School Equivalency Examination.

**WRT 070 Developmental Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None.

Training in fundamental writing skills. Includes sentence development and structure, writing a variety of sentences, and writing short papers.

**WRT 070A Developmental Writing: Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Module A constitutes approximately the first one-third of WRT 070.

**WRT 070B Developmental Writing: Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 070A or concurrent enrollment.

Module B constitutes approximately the second one-third of WRT 070.

**WRT 070C Developmental Writing: Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 070B or concurrent enrollment.

Module C constitutes approximately the third one-third of WRT 070.

**WRT 072 Sentence Patterns /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

Review of various types of sentence structures. Includes variety of sentences, common grammar and sentence errors, punctuation, and short papers.

**WRT 073 Punctuation /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

A mini-course in the mechanics of writing, including punctuation, capitalization, numbers and abbreviations.

**WRT 075 Developmental Writing for International Students /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): ESL 084 or satisfactory score on the writing assessment test.

Specialized training for bilingual students in the fundamental skills of writing in English. Includes writing and punctuating sentences, sentence development and structure, and the writing process. Also includes idiomatic expressions and issues of interest to non-native speakers of English. (Equivalent to WRT 070.)

**WRT 075A Developmental Writing for International Students: Beginning Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): ESL 084 or satisfactory score on the writing assessment test.

Specialized training for bilingual students in the fundamental skills of beginning writing in English. Includes beginning writing and punctuating sentences, beginning sentence development and structure, and the short paragraph writing process. Also includes idiomatic expressions and issues of interest to non-native speakers of English. (Equivalent to WRT 070A).

**WRT 075B Developmental Writing for International Students: Intermediate Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 075A.

Specialized training for bilingual students in the fundamental skills of intermediate writing in English. Includes intermediate writing and punctuating sentences, intermediate sentence development and structure, and the long paragraph writing process. Also includes idiomatic expressions and issues of interest to non-native speakers of English. (Equivalent to WRT 070B).

**WRT 075C Developmental Writing for International Students: Advanced Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 075B.

Specialized training for bilingual students in the fundamental skills of advanced writing in English. Includes advanced writing and punctuating sentences, advanced sentence development and structure, and the short essay writing process. Also includes idiomatic expressions and issues of interest to non-native speakers of English. (Equivalent to WRT 070C).

**WRT 077 Paragraphs /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): None.

A mini-course providing practice in planning and writing effective paragraphs as basic units for essays. Emphasis on topic sentences, patterns of development and clear transitions.

**WRT 100 Writing Fundamentals /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 070 or satisfactory score on writing assessment test. Review of sentence structure, mechanics and usage. Includes review of the writing process, designing and writing effective paragraphs, and writing longer papers.

**WRT 100A Writing Fundamentals: Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 070 or satisfactory score on writing assessment test. Module A constitutes approximately the first one-third of WRT 100.

**WRT 100B Writing Fundamentals: Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 100A.

Module B constitutes approximately the second one-third of WRT 100.

**WRT 100C Writing Fundamentals: Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 100B.

Module C constitutes approximately the third one-third of WRT 100.

**WRT 101 Writing I /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 100 or satisfactory score on writing assessment test. Principles and practices of writing. Includes writing college-level essays, review of basic writing skills, and written works. Also includes descriptive, expository, and persuasive writing.

**WRT 101A Writing IA /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 100 or satisfactory score on writing assessment test. Practice in structuring college-level essays. Includes the writing process, rhetorical analysis, and narrative and descriptive strategies.

**WRT 101B Writing IB /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 101A.

Practice in writing essays on selected themes. Includes the following strategies: illustration, comparison and contrast, definition and analysis.

**WRT 101C Writing IC /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 101B.

Practice in writing argumentative essays. Includes principles of argumentation, library research and writing from sources. Also includes writing an in-class essay.

**WRT 102 Writing II /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 101.

Continuation of WRT 101. Includes writing analytical or critical papers, analysis and discussion of various types of literature, developing research skills, and written works. Also includes writing a research paper.



**WRT 106 Writing Fundamentals for International Students /3 cr. hrs./ 3 periods (3 lec.)**

Prerequisite(s): WRT 075 or satisfactory score on the writing assessment test. Review of sentence structure, mechanics and usage. Includes paragraph development, short essay organization, and revising for clarity, coherence and organization. Also includes methodologies appropriate for international students. (Equivalent to WRT 100.)

**WRT 107 Writing I for International Students /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 106 or satisfactory score on the writing assessment test. Introduction to the principles of good writing with emphasis on the techniques and practice of narration, description, explanation and argumentation. Includes the writing process, paragraph and essay writing, and reading and analysis of prose models. Also includes methodologies appropriate for international students. (Equivalent to WRT 101.)

**WRT 108 Writing II for International Students /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 107. Practice in writing analytical compositions, including a research paper or annotated papers. Includes readings in fiction, nonfiction, drama and poetry as a basis for writing. Also includes methodologies appropriate for international students. (Equivalent to WRT 102.)

**WRT 125 Poetry Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 101. Techniques of poetry writing. May be taken 3 times for a maximum of 9 credit hours.

**WRT 126 Short Story Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Techniques of writing short fiction. May be taken three times for a maximum of nine credit hours.

**WRT 150 Practical Communications /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 070 or satisfactory score on the writing assessment test. Writing and speaking skills for career fields. Includes career application procedures, and written and oral communication skills.

**WRT 154 Career Communications /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 100 or 101. Job related writing skills. Includes writing for audiences and situations, completing job related forms, writing resumes, and using standard written English. May include other written communications as appropriate to occupational areas.

**WRT 154A Career Communications: Job Related Writing Principles and Skills /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 100 or 101. Basic job related writing principles and skills. Includes the use of standard written English and writing for audiences and situations.

**WRT 154B Career Communications: Basic Job Related Correspondence /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 154A. Writing job related correspondence. Includes forms and letters, resumes, and application letters and forms.

**WRT 154C Career Communications: Basic Job Related Reports /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 154B. Writing of job related reports. Includes short reports, technical descriptions, and evaluation of published materials.

**WRT 162 Literary Magazine Workshop /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): None. Literary magazine publication. Includes application of editing, design, layout and production techniques. Laboratory work includes at least one literary publication of student work in each semester. It is recommended that this course be taken for credit for two consecutive semesters. May be taken two times for a maximum of six credit hours.

**WRT 196 Independent Studies in Writing /1-4 cr. hrs./3-12 periods (3-12 lab)**

Prerequisite(s): None. Independent projects in writing to be arranged with the instructor. May be taken four times for a maximum of sixteen credit hours.

**WRT 198 Selected Topics in WRT: /1-4 cr. hrs./1-4 periods (1-4 lec.)**

Prerequisite(s): Consent of instructor. Selected topics in writing which include specific styles, techniques, skills, and processes.

**WRT 205 Poetry Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 101, 102. Introduction to the techniques used in contemporary poetry. Includes study of selected poems as examples and practice in applying techniques by writing and discussing original poetry. May be taken three times for a maximum of nine credit hours.

**WRT 206 Short Story Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 101, 102. Introduction to the techniques used in contemporary short fiction. Includes study of selected short fiction as examples and practice in separate elements of technique through short exercises as well as writing and discussion of original manuscripts. May be taken three times for a maximum of nine credit hours.

**WRT 207 Sophomore Composition /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 102, and consent of instructor. Practice in exposition and some narrative. Includes study of satire, the personal essay, introduction to the use of fiction techniques in nonfiction, and



class discussion of original manuscripts. May be taken four times for a maximum of twelve credit hours.

**WRT 215 Advanced Poetry Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 125 or 205.

Continuation of poetry writing with increased emphasis on craft. Candid peer and instructor criticism of both published models and student poems.

**WRT 216 Advanced Fiction Writing /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): Consent of instructor.

Advanced techniques of fiction writing. Includes writing, critiquing and revising original fiction and preparing manuscripts for publication. May be taken four times for a maximum of twelve credit hours.

**WRT 217 Creative Nonfiction /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 207 or consent of instructor.

Nonfiction writing with an emphasis on using narrative elements and devices. Includes writing, critiquing, and revising original manuscripts as well as the preparation of manuscripts for publication. Also includes the personal essay and memoir as literary forms. May be taken four times for a maximum of twelve credit hours.

**WRT 226 Special Projects in Fiction /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 216 and consent of instructor.

Continuation of advanced fiction writing with emphasis on book-length projects. Includes writing, critiquing, and revising of short story collections and novels and preparing them for publication. May be taken four times for a maximum of twelve credit hours.

**WRT 254 Advanced Professional Communications /3 cr. hrs./3 periods (3 lec.)**

Prerequisite(s): WRT 154 or 102.

Techniques of writing for scientific, technical and other professional occupations. Includes writing long and short reports, researching and writing about a topic, oral presentations, and use of appropriate style.

**WRT 254A Advanced Professional Communications: Module A /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 154 or 102.

Module A constitutes approximately the first one-third of WRT 254.

**WRT 254B Advanced Professional Communications: Module B /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 254A or concurrent enrollment.

Module B constitutes approximately the second one-third of WRT 254.

**WRT 254C Advanced Professional Communications: Module C /1 cr. hr./1 period (1 lec.)**

Prerequisite(s): WRT 254B or concurrent enrollment.

Module C constitutes approximately the third one-third of WRT 254.

**WRT 280 Workshop in Tutoring Composition /3 cr. hrs./9 periods (9 lec.)**

Prerequisite(s): WRT 101, 102.

Instruction and practice in tutoring writing.

**WRT 280A Beginning Workshop in Tutoring Composition /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): WRT 101, 102.

Introductory workshop in tutoring composition. Instruction and practice in tutoring techniques.

**WRT 280B Intermediate Workshop in Tutoring Composition /1 cr. hr./3 periods (3 lab)**

Prerequisite(s): WRT 280A.

Continued improvement of tutoring skills acquired in WRT 280A. Additional instruction and practice in tutoring techniques.

**WRT 285 Pima Writers' Workshop /2 cr. hrs./2 periods (2 lec.)**

Prerequisite(s): None.

Writing of fiction and poetry. Includes presentations by professional authors on plot and character development, writing techniques, and marketing. Also includes the opportunity for participants to have their writing critiqued by professional writers. May be taken five times for a maximum of ten credit hours.

**WRT 298 Advanced Topics in WRT: /1-4 cr. hrs./1-4 periods (1-4 lec.)**

Prerequisite(s): Consent of instructor.

Advanced topics in writing which include specific styles, techniques, skills, and processes. Credit may be earned for each topic taken.

**YAQUI**

**YAQ 110 Elementary Yaqui I /4 cr. hrs./4 periods (4 lec.)**

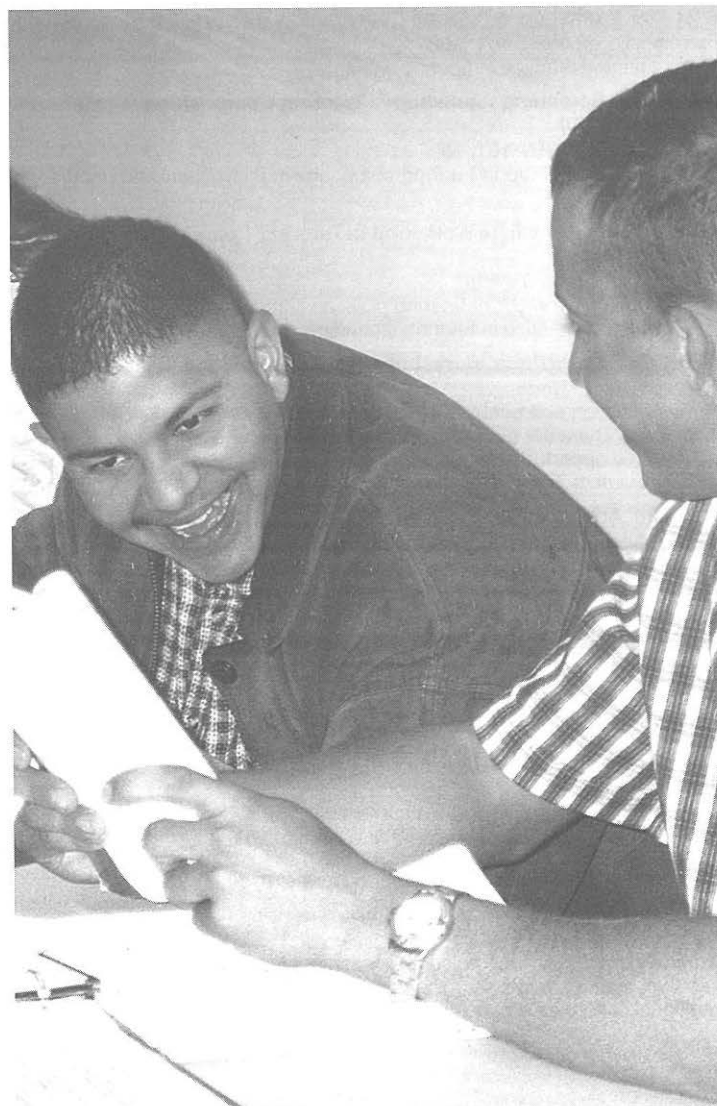
Prerequisite(s): None.

Introduction to the Yaqui language. Includes instruction in the grammar and writing system of the language and is intended to help the student acquire skills in speaking, reading, and writing Yaqui. Also includes an overview of Yaqui traditional culture as a background for the use of the language.

**YAQ 111 Elementary Yaqui II /4 cr. hrs./4 periods (4 lec.)**

Prerequisite(s): YAQ 110.

Continuation of YAQ 110. Includes development of skills in speaking, understanding, reading, and writing the language. Also includes study of the Yaqui traditional culture as a background for language use.



## Contractual and External Admissions Programs and Courses

The programs and courses in this section are usually provided as a service to external agencies, usually on a contractual basis. Students are selected for these programs and courses by the contractual agency.

### Basic Technical Mastery—Certificate for Direct Employment

#### Required Courses (16 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
FPC 101	Work and Learning in America	1	
FPC	Complete three credit hours from the following list:	3	
FPC 102	Reading for Information		
FPC 103	Applied Mathematics		
FPC 104	Writing at Work		
FPC 105	Applied Technology		
FPC 106	Observation at Work		
FPC 107	Teamwork		
FPC 108	Locating Information		
FPC 109	Listening		
FPC 110	Speaking English on the Job		
Electives	Technical Electives	12	
Complete 12 credit hours from Business or Industry Technical courses with the approval of a faculty advisor or instructional dean.			

#### Suggested Course Sequence

See a faculty advisor or counselor.

## Advanced Technical Mastery—Certificate for Direct Employment

### Required Courses (30 Credit Hours)

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

FPC 101	Work and Learning in America	1	
FPC	Complete three credit hours from the following list:	3	
FPC 102	Reading for Information		
FPC 103	Applied Mathematics		
FPC 104	Writing at Work		
FPC 105	Applied Technology		
FPC 106	Observation at Work		
FPC 107	Teamwork		
FPC 108	Locating Information		
FPC 109	Listening		
FPC 110	Speaking English on the Job		

Technical Electives 20  
Complete 20 credit hours from Business or Industry  
Technical courses with the approval of a faculty  
advisor or instructional dean.

### General Education Courses

#### Communication

Choose 3 credit hours from the following list:  
ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

#### Analysis and Critical Thinking

Choose 3 credit hours from the mathematics, or  
science, or critical thinking course lists.

#### **Mathematics**

MAT 100 level or higher (except MAT 198)  
TEC 113

#### **Science**

MAC 275  
Any AGECE categorical requirement from the  
Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a faculty advisor or counselor.

## 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 skill which 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.

### Required Courses (60-64 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
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**Reading Requirement** - Please refer to the Reading Requirement in the General Education section before enrolling in a general education course.

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

Technical electives 42-46

### General Education Courses

#### Communication

ASC 151 and 251  
MEC 101 and SPE 120  
SPE 102 and WRT 154  
SPE 120 and WRT 154  
WRT 101 and 102\* or WRT 107 and 108

\*As an exception, WRT 101 and 102 may meet this requirement to accommodate students who choose the transfer route.

#### Analysis and Critical Thinking

#### **Mathematics**

This requirement must be met by course work or by assessment of competency at the 100 level or higher.

Students who assess out of mathematics must still take 6 credits under the Analysis and Critical Thinking category including one course in either science or critical thinking.

MAT 100 level or higher (except MAT 198)

TEC 113

### Science

MAC 275

Any AGECE categorical requirement from the Biological/Physical Science List

### Critical Thinking

PHI 120

### Global Awareness

6

This requirement must be met by taking a course from at least two of the categories and one of the courses must contain cultural diversity criteria, a C or G designation from the AGECE categorical requirements lists.

### Humanities and Fine Arts

Any AGECE categorical requirement from the Art list

Any AGECE categorical requirement from the Humanities/Historical Perspective list

Any AGECE categorical requirement from the Other Requirements Options: (c) Second Language

Any conversational language course including American Sign Language (SLG) numbered at 100 level or higher.

### Social and Behavioral Sciences

Any AGECE Categorical requirement from the Social/Behavioral Sciences list

Any AGECE categorical requirement from the Other Requirement Options: (d) International and Multi-Cultural Studies list

### Leadership and Ethics

HDE 170

Any course in this category meets the cultural diversity requirement.

### Computer Literacy

0-3

This requirement may be met by either course work or by competency attained through or determined by the program. CSA 173, 174, 175

### Suggested Course Sequence

See a faculty advisor or counselor.

## Corrections Training Academy—Certificate for Direct Employment

This certificate program is open to those persons selected for employment by the Arizona Department of Corrections or the Pima County Sheriff's Department, Bureau of Corrections, and is awarded upon successful completion of the proper training academy. Those students interested in a career in corrections should contact the Arizona Department of Corrections or the Pima County Sheriff's Department.

### Required Courses (18 Credit Hours)

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

### Arizona Correctional Officer Training Academy

COR 160	Correctional System Ethics and Professionalism	1	*
COR 162	Introduction to Inmate Management	3	*
COR 164	Correctional Information Systems	1	*
COR 166	Correction Officers Safety and Weapons Training	2	*
COR 168	Inmate Security Procedures	2	*
COR 170	Security, Custody, and Control Procedures	2	*
COR 172	Conflict and Crisis Management	2	*
COR 176	Medical and Mental Health	2	*
COR 178	Physical Fitness and Self Defense Training	3	*

### County Correctional Officer Training Academy

COR 110	County Correctional Officer Training Academy	18	*
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### Suggested Course Sequence

See a Public Safety and Emergency Services Institute advisor.

\*For additional prerequisite information, check course section.

## Basic Microcomputer Repair—Certificate for Direct Employment

This program is taught in conjunction with the State of Arizona and is **not** open to the general public. Those students interested in a program in microcomputer assembly/repair should refer to Technology-Microcomputer Technology in the program section of this catalog.

### Required Courses (16 Credit Hours)

Course Number	Course/Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CSC 100	Introduction to Computers and Information Systems	3	MAT 092*
CSC 105	Survey of Microcomputer Uses	3	
CSC 108	Microcomputer Operating Systems	3	
ETR 130	Microcomputer Assembly and Testing	4	*
WRT 150	Practical Communications	3	*

### Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.

## Technical Microcomputer Repair—Certificate for Direct Employment

This program is taught in conjunction with the State of Arizona and is **not** open to the general public. Those students interested in a program in microcomputer assembly/repair should refer to Technology-Microcomputer Technology in the program section of this catalog.

### Required Courses (33-34 Credit Hours)

Course Number	Course/Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
CSC 100	Introduction to Computers and Information Systems	3	*
CSC 105	Survey of Microcomputer Uses	3	
CSC 108	Microcomputer Operating Systems	3	
ETR 101	Basic DC Electronic Circuit Analysis	3	*
ETR 110	Digital Electronics	3	

ETR 130	Microcomputer Assembly and Testing	4	*
ETR 132	Microcomputer Systems Servicing	3	ETR 130
ETR 210	Local Area Network (LAN) Servicing	3	*

### Support Courses

ETR 290	Microcomputer Repair Internship		ETR 132
or 299	Co-op Related Class in ETR		*
and 299	Co-op Work in ETR	2-3	*

### General Education Courses

Students may select the General Education Courses from the list below or from the same program in the 1998/1999 catalog for this academic year only. Please note that in many cases the General Education requirements are the same in both catalogs. The 1998/1999 catalog is available on the World Wide Web or from your faculty advisor or counselor.

### Communication

3

Choose 3 credit hours from the following list:

ASC 151  
MEC 101 or SPE 120  
SPE 102 or WRT 154  
WRT 101 or 107

### Analysis and Critical Thinking

3

Choose 3 credit hours from the mathematics, or science, or critical thinking course lists.

### Mathematics

MAT 100 level or higher (except MAT 198)  
TEC 113

### Science

MAC 275  
Any AGECE categorical requirement from the Biological/Physical Science list.

### Critical Thinking

PHI 120

### Suggested Course Sequence

See a faculty advisor or counselor.

\*For additional prerequisite information, check course section.





## Social Services Family Support Services—Certificate

### Required Courses (18 Credit Hours)

Course Number	Course Title	Credit Hours	Prerequisites
<b>Core Courses</b> - A grade of C or better is required for graduation.			
ECE 107	Human Development and Relations	3	REA 112*
HDE 110	Developing Self-Esteem	1	
HDE 140	Assertiveness Training	2	
SSE 110	Introduction to Social Welfare	3	
SSE 111	Group Work	3	
SSE 210	Community Organization and Development	3	SSE 110
SSE 242	Crisis Intervention, Theory and Techniques	3	*

### Suggested Course Sequence

See a social services faculty advisor.

\*For additional prerequisite information, check course section.

## Apprentice Related Instruction

Pima Community College works jointly with local and state apprenticeship groups to offer related instruction in a number of apprenticeship programs. Most programs require one year or more of on-the-job training to learn a skilled craft or trade. Students also receive classroom instruction which explains the principles and procedures used on the job.

Before students may enroll for apprentice related instruction, they must be tested, selected, signed up (indentured) and 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 presently offered in these areas:

Carpentry	Machinist
Custodial Development	Masonry
Electrical	Painting and Decorating
Engineering Technician	Pipe Fitting
General Construction	Plumbing
Heating, Ventilating, Air Conditioning	Roofing
Ironworking	Sheet Metal

**Certificate Program:** Upon finishing all apprentice related instruction in a chosen program, a student will obtain a certificate of completion from Pima Community College. Students may also work toward an associate degree either while enrolled in apprenticeship programs or after completing the apprenticeship.

**Degree Program:** Those working to gain an 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 as well as satisfy the college reading requirement. The college technical courses must be approved by the department chair.

## Apprentice Related Instruction

Before students may enroll for apprentice related instruction, they must be tested, selected, signed up (indentured) and 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 presently offered in these areas:

### CARPENTRY

CRP	101	Concrete Formwork: Building Layout /1 cr. hr./1 period (1 lec.)
CRP	102	Concrete Formwork: Residential Footing Form /1 cr. hr./1 period (1 lec.)
CRP	103	Concrete Formwork: Footing Forms and Bolt Layout /1 cr. hr./1 period (1 lec.)
CRP	104	Concrete Formwork: Basic Wall Forms /1 cr. hr./1 period (1 lec.)
CRP	105	Concrete Formwork: Circular Wall Form /1 cr. hr./1 period (1 lec.)
CRP	106	Concrete Formwork: Column Form /1 cr. hr./1 period (1 lec.)
CRP	107	Concrete Formwork: Spandrel Beam /1 cr. hr./1 period (1 lec.)
CRP	108	Concrete Formwork: Deck Forms and Shoring /1 cr. hr./1 period (1 lec.)
CRP	109	Concrete Formwork: Concrete Stair Forms /1 cr. hr./1 period (1 lec.)
CRP	110	Concrete Formwork: Tilt-up Construction I /1 cr. hr./1 period (1 lec.)
CRP	111	Concrete Formwork: Tilt-up Construction II /1 cr. hr./1 period (1 lec.)
CRP	112	Concrete Formwork: Bridge Pier Column /1 cr. hr./1 period (1 lec.)
CRP	113	Concrete Formwork: Flatwork /1 cr. hr./1 period (1 lec.)
CRP	114	Concrete Formwork: Culverts, Headwall and Wingwalls /1 cr. hr./1 period (1 lec.)
CRP	115	Concrete Formwork: Concrete Wall Blockouts /1 cr. hr./1 period (1 lec.)
CRP	116	Concrete Formwork: Gang Forms /1 cr. hr./1 period (1 lec.)
CRP	117	Concrete Formwork: Retaining Wall Footing Form /1 cr. hr./1 period (1 lec.)
CRP	118	Framing: Basic Wall Framing /1 cr. hr./1 period (1 lec.)
CRP	119	Framing: Wall Layout, Plating and Detailing /1 cr. hr./1 period (1 lec.)
CRP	120	Framing: Floor Joist /1 cr. hr./1 period (1 lec.)
CRP	121	Framing: Gable Roof /1 cr. hr./1 period (1 lec.)
CRP	122	Framing: Hip Roof /1 cr. hr./1 period (1 lec.)
CRP	123	Framing: Intersecting Roof /1 cr. hr./1 period (1 lec.)
CRP	124	Framing: Wood Stairs /1 cr. hr./1 period (1 lec.)
CRP	125	Framing: Framing Square /1 cr. hr./1 period (1 lec.)
CRP	126	Framing: Advanced Framing Square Application /1 cr. hr./1 period (1 lec.)
CRP	127	Framing: Residential Layout /1 cr. hr./1 period (1 lec.)
CRP	128	Exterior Finish: Canopy /1 cr. hr./1 period (1 lec.)
CRP	129	Exterior Finish: Roof Covering /1 cr. hr./1 period (1 lec.)

## APPRENTICE RELATED INSTRUCTION

CRP	130	Exterior Finish: Commercial Display /1 cr. hr./1 period (1 lec.)
CRP	131	Interior Finish: Standard Door Installation /1 cr. hr./1 period (1 lec.)
CRP	132	Interior Finish: Running Trim /1 cr. hr./1 period (1 lec.)
CRP	133	Interior Finish: Door Hardware /1 cr. hr./1 period (1 lec.)
CRP	134	Interior Finish: Metal Partitions /1 cr. hr./1 period (1 lec.)
CRP	135	Interior Finish: Soffit Panel /1 cr. hr./1 period (1 lec.)
CRP	136	Interior Systems: Metal Frame Walls /1 cr. hr./1 period (1 lec.)
CRP	137	Interior Systems: Dry Wall Application /1 cr. hr./1 period (1 lec.)
CRP	138	Interior Systems: Dry Wall Estimation of Material /1 cr. hr./1 period (1 lec.)
CRP	139	Interior Systems: Suspended Lay-in Ceiling /1 cr. hr./1 period (1 lec.)
CRP	150	Carpentry History: Tools and Materials /5 cr. hrs./6 periods (4 lec., 2 lab)
CRP	151	Carpentry: Foundations and Forms /5 cr. hrs./6 periods (4 lec., 2 lab)
CRP	152	Carpentry: Exterior Finish /5 cr. hr./6 periods (4 lec., 2 lab)
CRP	153	Reinforced Concrete and Heavy Construction /5 cr. hrs./6 periods (4 lec., 2 lab)
CRP	154	Carpentry: Interior Finish /5 cr. hrs./6 periods (4 lec., 2 lab)
CRP	155	Carpentry: Roof Framing /5 cr. hrs./6 periods (4 lec., 2 lab)
CRP	156	Carpentry: Stair Building /5 cr. hrs./6 periods (4 lec., 2 lab)
CRP	157	Blueprint Reading and Estimating /5 cr. hrs./6 periods (4 lec., 2 lab)

### CERAMIC MANUFACTURING

CMT	102	Hand Tool Operations /1 cr. hr./1 period (1 lec.)
CMT	103	Precision Measuring Equipment /3 cr. hrs./3 periods (3 lec.)

### CUSTODIAL DEVELOPMENT

CUA	101	Custodial Development: Chemicals and Equipment Used in Cleaning /1 cr. hr./1 period (1 lec.)
CUA	102	Custodial Development: Area Cleaning Techniques /1 cr. hr./1 period (1 lec.)
CUA	103	Custodial Development: Safety and Floor Care /1 cr. hr./1 period (1 lec.)
CUA	104	Custodial Development I: Floor Coverings /1 cr. hr./1 period (1 lec.)
CUA	105	Custodial Development I: Floor Cleaning Techniques /1 cr. hr./1 period (1 lec.)
CUA	106	Custodial Development I: Carpet Cleaning Techniques /1 cr. hr./1 period (1 lec.)

CUA	202	Custodial Development II: Special Area Cleaning Techniques /1 cr. hr./1 period (1 lec.)
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### ELECTRICAL APPRENTICESHIP TRAINING

ELT	101	Apprentice Inside Wireman I /6 cr. hrs./6 periods (6 lec.)
ELT	101A	Apprentice Inside Wireman I: Math Review /3 cr. hrs./3 periods (3 lec.)
ELT	101B	Apprentice Inside Wireman I: Math for Electricians /3 cr. hrs./3 periods (3 lec.)
ELT	102	Apprentice Inside Wireman II /6 cr. hrs./6 periods (6 lec.)
ELT	201	Apprentice Inside Wireman III /6 cr. hrs./6 periods (6 lec.)
ELT	202	Apprentice Inside Wireman IV /6 cr. hrs./6 periods (6 lec.)
ELT	231	Apprentice Inside Wireman V /6 cr. hrs./6 periods (6 lec.)
ELT	232	Apprentice Inside Wireman VI /6 cr. hrs./6 periods (6 lec.)
ELT	241	Apprentice Inside Wireman VII /6 cr. hrs./6 periods (6 lec.)
ELT	242	Apprentice Inside Wireman VIII /6 cr. hrs./6 periods (6 lec.)
ELT	251	Apprentice Inside Wireman IX /6 cr. hrs./6 periods (6 lec.)
ELT	252	Apprentice Inside Wireman X /6 cr. hrs./6 periods (6 lec.)

### IRONWORKING APPRENTICESHIP

IWA	150	Introduction to Trade Science /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	151	Reinforcing Blueprint Reading /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	152	Basic Welding /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	153	Advanced Welding /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	154	Rigging and Safety /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	155	Structural Blueprint Reading I /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	156	Structural Blueprint Reading II /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	157	Ornamental Iron I /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	158	Steel Detailing and Fabrication /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	159	Ornamental Iron II /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	160	Post Tensioning /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	161	Light Industrial Construction Methods and Materials /3 cr. hrs./4 periods (3 lec., 1 lab)
IWA	164	Intermediate Combination Welding /3 cr. hrs./5 periods (2 lec., 3 lab)
IWA	166	Advanced Combination Welding /3 cr. hrs./5 periods (2 lec., 3 lab)

# **MACHINE TOOL APPRENTICE**

MTA	101	Shop Theory I: Safety/Chip Formation/cutting Fluids /5 cr. hr./ .5 period (.5 lec.)
MTA	102	Shop Theory I Saws and Sawing /5 cr. hr./5 period (.5 lec.)
MTA	103	Shop Theory I: Drill Presses /1 cr. hr./1 period (1 lec.)
MTA	104	Shop Theory I: Milling Machines /1 cr. hr./1 period (1 lec.)
MTA	111	Blueprint Reading I /1 cr. hr./1 period (1 lec.)
MTA	113	Machine Tool Mathematics I: Basic Math/Algebra /1 cr. hr./ 1 period (1 lec.)
MTA	114	Machine Tool Mathematics I: Geometry/Trigonometry /1 cr. hr./ 1 period (1 lec.)

# **PLUMBING AND PIPEFITTING**

PFA	150A	Plumbing and Pipefitting I /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	150B	Plumbing and Pipefitting I /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	151A	Plumbing and Pipefitting II /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	151B	Plumbing and Pipefitting II /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	152A	Plumbing and Pipefitting III /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	152B	Plumbing and Pipefitting III /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	153A	Plumbing and Pipefitting IV /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	153B	Plumbing and Pipefitting IV /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	154A	Plumbing V /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	154B	Plumbing V /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	155A	Plumbing VI /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	155B	Plumbing VI /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	156A	Plumbing VII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	156B	Plumbing VII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	157A	Plumbing VIII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	157B	Plumbing VIII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	158A	Plumbing IX /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	158B	Plumbing IX /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	159A	Plumbing X /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	159B	Plumbing X /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	160A	Pipefitting V /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	160B	Pipefitting V /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	161A	Pipefitting VI /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	161B	Pipefitting VI /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	162A	Pipefitting VII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	162B	Pipefitting VII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	163A	Pipefitting VIII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	163B	Pipefitting VIII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	164A	Pipefitting IX /4.5 cr. hrs./4.5 periods (4.5 lec.)

PFA	164B	Pipefitting IX /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	165A	Pipefitting X /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	165B	Pipefitting X /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	166A	Refrigeration I /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	166B	Refrigeration I /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	167A	Refrigeration II /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	167B	Refrigeration II /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	168A	Refrigeration III /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	168B	Refrigeration III /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	169A	Refrigeration IV /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	169B	Refrigeration IV /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	170A	Refrigeration V /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	170B	Refrigeration V /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	171A	Refrigeration VI /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	171B	Refrigeration VI /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	172A	Refrigeration VII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	172B	Refrigeration VII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	173A	Refrigeration VIII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	173B	Refrigeration VIII /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	174A	Refrigeration IX /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	174B	Refrigeration IX /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	175A	Refrigeration X /4.5 cr. hrs./4.5 periods (4.5 lec.)
PFA	175B	Refrigeration X /4.5 cr. hrs./4.5 periods (4.5 lec.)

# **SAFETY EDUCATION**

SED	115	Stand-Up, Narrow-Aisle Lift Truck Operations /2 cr. hrs./ 4 periods (1 lec., 3 lab)
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# **SHEET METAL**

SMA	111	Apprentice Sheet Metal I /5 cr. hrs./5 periods (5 lec.)
SMA	112	Apprentice Sheet Metal II /5 cr. hrs./5 periods (5 lec.)
SMA	121	Apprentice Sheet Metal III /5 cr. hrs./5 periods (5 lec.)
SMA	122	Apprentice Sheet Metal IV /5 cr. hrs./5 periods (5 lec.)
SMA	131	Apprentice Sheet Metal V /5 cr. hrs./5 periods (5 lec.)
SMA	132	Apprentice Sheet Metal VI /5 cr. hrs./5 periods (5 lec.)
SMA	141	Apprentice Sheet Metal VII /5 cr. hrs./5 periods (5 lec.)
SMA	142	Apprentice Sheet Metal VIII /5 cr. hrs./5 periods (5 lec.)
SMA	151	Apprentice Sheet Metal IX /5 cr. hrs./5 periods (5 lec.)
SMA	152	Apprentice Sheet Metal X /5 cr. hrs./5 periods (5 lec.)

## Wheels of Learning

### CARPENTRY

WOL 101	Carpentry I /6 cr. hrs./6 periods (6 lec.)
WOL 102	Carpentry II /6 cr. hrs./6 periods (6 lec.)
WOL 103	Carpentry III /6 cr. hrs./6 periods (6 lec.)
WOL 104	Carpentry IV /6 cr. hrs./6 periods (6 lec.)
WOL 105	Carpentry V /6 cr. hrs./6 periods (6 lec.)
WOL 106	Carpentry VI /6 cr. hrs./6 periods (6 lec.)
WOL 107	Carpentry VII /6 cr. hrs./6 periods (6 lec.)
WOL 108	Carpentry VIII /6 cr. hrs./6 periods (6 lec.)

### HVAC

WOL 111	HVAC I /6 cr. hrs./6 periods (6 lec.)
WOL 112	HVAC II /6 cr. hrs./6 periods (6 lec.)
WOL 113	HVAC III /6 cr. hrs./6 periods (6 lec.)
WOL 114	HVAC IV /6 cr. hrs./6 periods (6 lec.)
WOL 115	HVAC V /6 cr. hrs./6 periods (6 lec.)
WOL 116	HVAC VI /6 cr. hrs./6 periods (6 lec.)
WOL 117	HVAC VII /6 cr. hrs./6 periods (6 lec.)
WOL 118	HVAC VIII /6 cr. hrs./6 periods (6 lec.)

### MASONRY

WOL 121	Masonry I /6 cr. hrs./6 periods (6 lec.)
WOL 122	Masonry II /6 cr. hrs./6 periods (6 lec.)
WOL 123	Masonry III /6 cr. hrs./6 periods (6 lec.)
WOL 124	Masonry IV /6 cr. hrs./6 periods (6 lec.)
WOL 125	Masonry V /6 cr. hrs./6 periods (6 lec.)
WOL 126	Masonry VI /6 cr. hrs./6 periods (6 lec.)

### SHEET METAL

WOL 131	Sheet Metal I /6 cr. hrs./6 periods (6 lec.)
WOL 132	Sheet Metal II /6 cr. hrs./6 periods (6 lec.)
WOL 133	Sheet Metal III /6 cr. hrs./6 periods (6 lec.)
WOL 134	Sheet Metal IV /6 cr. hrs./6 periods (6 lec.)
WOL 135	Sheet Metal V /6 cr. hrs./6 periods (6 lec.)
WOL 136	Sheet Metal VI /6 cr. hrs./6 periods (6 lec.)
WOL 137	Sheet Metal VII /6 cr. hrs./6 periods (6 lec.)
WOL 138	Sheet Metal VIII /6 cr. hrs./6 periods (6 lec.)

### PAINTING

WOL 151	Construction Painting I /6 cr. hrs./6 periods (6 lec.)
WOL 152	Construction Painting II /6 cr. hrs./6 periods (6 lec.)



### PLUMBING

WOL 141	Plumbing I /6 cr. hrs./6 periods (6 lec.)
WOL 142	Plumbing II /6 cr. hrs./6 periods (6 lec.)
WOL 143	Plumbing III /6 cr. hrs./6 periods (6 lec.)
WOL 144	Plumbing IV /6 cr. hrs./6 periods (6 lec.)
WOL 145	Plumbing V /6 cr. hrs./6 periods (6 lec.)
WOL 146	Plumbing VI /6 cr. hrs./6 periods (6 lec.)
WOL 148	Plumbing VII /6 cr. hrs./6 periods (6 lec.)

## Industrial Continuing Education Training Courses

Pima Community College strives to meet training needs and requirements requested by local companies. The following courses have been made available to meet specific company training needs. In most cases when the courses are offered, they are open to any students who meet prerequisite requirements. Consult the Schedule of Classes for availability. The industrial training courses are not a part of any specific certificate or degree requirements.



**ASSEMBLY PRODUCTION**

ASP	101	Assembly Production Processing /4 cr. hrs./6 periods (2 lec., 4 lab)
ASP	103	Hydraulic Systems /4 cr. hrs./6 periods (2 lec., 4 lab)
ASP	105	Pneumatic Systems /4 cr. hrs./6 periods (2 lec., 4 lab)
ASP	107	Vacuum Systems /4 cr. hrs./6 periods (2 lec., 4 lab)
ASP	109	Mechanical Assembly Tools and Machines /3 cr. hrs./5 periods (2 lec., 3 lab)
ASP	110	Assembly Tools and Instruments /2 cr. hrs./3 periods (1 lec., 2 lab)
ASP	112	Manufacturing Electronic Assemblies /3 cr. hrs./4 periods (2 lec., 2 lab)
ASP	114	Prototype and Electronic Test Equipment Construction / 3 cr. hrs./5 periods (2 lec., 3 lab)
ASP	116	Electronic Component Preparation and Insertion Equipment / 3 cr. hrs./5 periods (2 lec., 3 lab)
ASP	118	Physical Metrology /3 cr. hrs./5 periods (2 lec., 3 lab)
ASP	120	Metrology Measurement /3 cr. hrs./4 periods (2 lec., 2 lab)
ASP	123	Electrical Measurement /4 cr. hrs./6 periods (3 lec., 3 lab)
ASP	126	Waveform Generation /3 cr. hrs./4 periods (2 lec., 2 lab)
ASP	130	Waveform Analysis /3 cr. hrs./4 periods (2 lec., 2 lab)
ASP	140	Surface Mount Assembly /3 cr. hrs./4 periods (2 lec., 2 lab)

**FABRICATION**

FAB	101	Mechanical Calibration Inspection Techniques /4 cr. hrs./ 6 periods (2 lec., 4 lab)
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**MACHINE TOOL TECHNOLOGY**

MAC	102	Deburring and Parts Finishing /1.5 cr. hrs./2 periods (1 lec., 1 lab)
MAC	125	Tool and Cutter Grinding /4 cr. hrs./8 periods (2 lec., 6 lab)
MAC	127	Ultra Precision Production Grinding /4 cr. hrs./8 periods (2 lec., 6 lab)
MAC	251	Numerical Control Troubleshooting /4 cr. hrs./5 periods (3 lec., 2 lab)
MAC	270	Robotics and Automated Systems: Mechanical /4 cr. hrs./ 5 periods (3 lec., 2 lab)
MAC	271	Programmable Logic Controllers /4 cr. hrs./5 periods (3 lec., 2 lab)
MAC	281	Machine Shop for Technicians IV /4 cr. hrs./6 periods (3 lec., 3 lab)
MAC	282	Gage and Fixture Construction /4 cr. hrs./8 periods (2 lec., 6 lab)

**MAINTENANCE TECHNOLOGY**

MNT	101	Custodial Procedures /4 cr. hrs./6 periods (3 lec., 3 lab)
MNT	104	Lubrication of Industrial Equipment /3 cr. hrs./4 periods (2 lec., 2 lab)
MNT	106	Heavy Equipment Operations /2 cr. hrs./4 periods (1 lec., 3 lab)
MNT	108	Water Treatment for HVAC Systems /1 cr. hr./2 periods (1 lec., 1 lab)
MNT	110	Industrial Air Compressors /3 cr. hrs./7 periods (1 lec., 6 lab)
MNT	112	Industrial Pumps /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	114	Chillers and Cascade Systems /4 cr. hrs./6 periods (3 lec., 3 lab)
MNT	116	Industrial Boilers /5 cr. hrs./7 periods (4 lec., 3 lab)
MNT	118	Industrial Air Treatment /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	120	Fundamentals of Carpentry /3 cr. hrs./3 periods (3 lec.)
MNT	122	Tools and Equipment for Carpentry /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	124	Industrial Carpentry: Foundations /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	126	Industrial Carpentry: Framing I /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	128	Industrial Carpentry: Finishing I /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	130	Industrial Carpentry: Framing II /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	132	Industrial Carpentry: Finishing II /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	140	Tools and Equipment for Industrial Painting /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	141	Industrial Painting Applications I /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	142	Industrial Painting Applications II /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	150	Rigging and Load Lifting /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT	152	Industrial Bearings /2 cr. hrs./3 periods (2 lec., 1 lab)
MNT	154	Industrial Couplings, Clutches, and Brakes /2 cr. hrs./4 periods (1 lec., 3 lab)
MNT	155	Industrial Mechanical Drives /3 cr. hrs./4 periods (3 lec., 1 lab)
MNT	156	Fiberglass, Thermoplastic, and Metal Forming /3 cr. hrs./ 4 periods (2 lec., 2 lab)
MNT	160	Industrial Diesel Engine Maintenance and Repair /4 cr. hrs./ 6 periods (3 lec., 3 lab)
MNT	170	Industrial Plumbing and Piping Systems I /2 cr. hrs./3 periods (2 lec., 1 lab)
MNT	171	Industrial Plumbing and Piping Systems II /4 cr. hrs./6 periods (3 lec., 3 lab)

## INDUSTRIAL CONTINUING EDUCATION TRAINING COURSES

MNT 172	Industrial Plumbing and Piping Systems III /4 cr. hrs./6 periods (3 lec., 3 lab)
MNT 201	Direct Digital Controllers /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT 210	Air Logic Control Systems /2 cr. hrs./4 periods (1 lec., 3 lab)
MNT 220	Scraping and Flaking of Metals /2 cr. hrs./4 periods (1 lec., 3 lab)
MNT 230	Electrical Storage Batteries /2 cr. hrs./3 periods (2 lec., 1 lab)
MNT 231	Industrial Fire Alarm Systems /5 cr. hrs./8 periods (4 lec., 4 lab)
MNT 232	Master Clock Control and Public Address Systems /3 cr. hrs./5 periods (2 lec., 3 lab)
MNT 234	Industrial Emergency Generators /2 cr. hrs./4 periods (1 lec., 3 lab)
MNT 238	Electrical Transformers I /4 cr. hrs./6 periods (3 lec., 3 lab)
MNT 239	Electrical Transformers II /3 cr. hrs./3 periods (3 lec.)
MNT 242	High Voltage Electrical Switchgear /4 cr. hrs./6 periods (3 lec., 3 lab)
MNT 244	Conduit Systems and Hardware /3 cr. hrs./5 periods (2 lec., 3 lab)

### MATERIAL RECLAMATION

MRD 101	Material Reclamation and Disposal /1 cr. hrs./1.5 periods (5 lec., 1 lab)
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### MICROELECTRONICS

MRE 104	Introduction to Microelectronics /3 cr. hrs./3 periods (3 lec.)
MRE 112	Electronics for Technical Careers /3 cr. hrs./5 periods (2 lec., 3 lab)
MRE 115	Thick Film Screen Printing /4 cr. hrs./6 periods (3 lec., 3 lab)
MRE 116	Microelectronic Assembly: Wire Bond /3 cr. hrs./4 periods (2 lec., 2 lab)
MRE 117	Microelectronics Assembly: Die and Header Attach /3 cr. hrs./4 periods (2 lec., 2 lab)
MRE 119	Microelectronic Assembly: Inspection /3 cr. hrs./5 periods (2 lec., 3 lab)
MRE 120	Microelectronics Device Screening Tests /3 cr. hrs./5 periods (2 lec., 3 lab.)
MRE 121	Electronic Solder Assembly /2 cr. hrs./3 periods (1 lec., 2 lab)
MRE 122	Automated Factory Test Procedures /3 cr. hrs./4 periods (3 lec., 1 lab)
MRE 123	Electronic Fabrication and Processing /2 cr. hrs./3 periods (1 lec., 2 lab)
MRE 125	Printed Circuit Board Solder Assembly /3 cr. hrs./5 periods (1 lec., 4 lab)

MRE 200	Microelectronic Photolithographic Processes /3 cr. hrs./4 periods (2 lec., 2 lab)
MRE 220	Microelectronics Packaging /3 cr. hrs./4 periods (2 lec., 2 lab)
MRE 230	Microelectronics Circuit Fabrication /4 cr. hrs./6 periods (2 lec., 4 lab)

### PROCESS TECHNOLOGY

PRO 101	Production Processing of Circuit Boards /4 cr. hrs./8 periods (2 lec., 6 lab)
PRO 102	Production Hardware Processing /3 cr. hrs./5 periods (2 lec., 3 lab)
PRO 103	Plastics Processing of Circuit Boards /3 cr. hrs./5 periods (2 lec., 3 lab)
PRO 104	Plastics Processing of Production Hardware /3 cr. hrs./5 periods (2 lec., 3 lab)
PRO 106	Painting and Coating of Metals /4 cr. hrs./8 periods (2 lec., 6 lab)
PRO 107	Computer Numerical Control Concepts and Program Operation /4 cr. hrs./5 periods (3 lec., 2 lab)
PRO 108	Drilling Processes of Circuit Boards /3 cr. hrs./5 periods (2 lec., 3 lab)
PRO 109	Heat Treatment Processes /3 cr. hrs./5 periods (2 lec., 3 lab)
PRO 110	Surface Plating /3 cr. hrs./5 periods (2 lec., 3 lab)
PRO 111	Production Processing of Circuit Boards II /4 cr. hrs./8 periods (2 lec., 6 lab)
PRO 116	Advanced Painting and Coating of Metals /3 cr. hrs./4 periods (2 lec., 2 lab)
PRO 120	Mechanical Aspects of Circuit Board Manufacturing I /4 cr. hrs./6 periods (3 lec., 3 lab)
PRO 122	Mechanical Aspects of Process Facilities /3 cr. hrs./5 periods (2 lec., 3 lab)

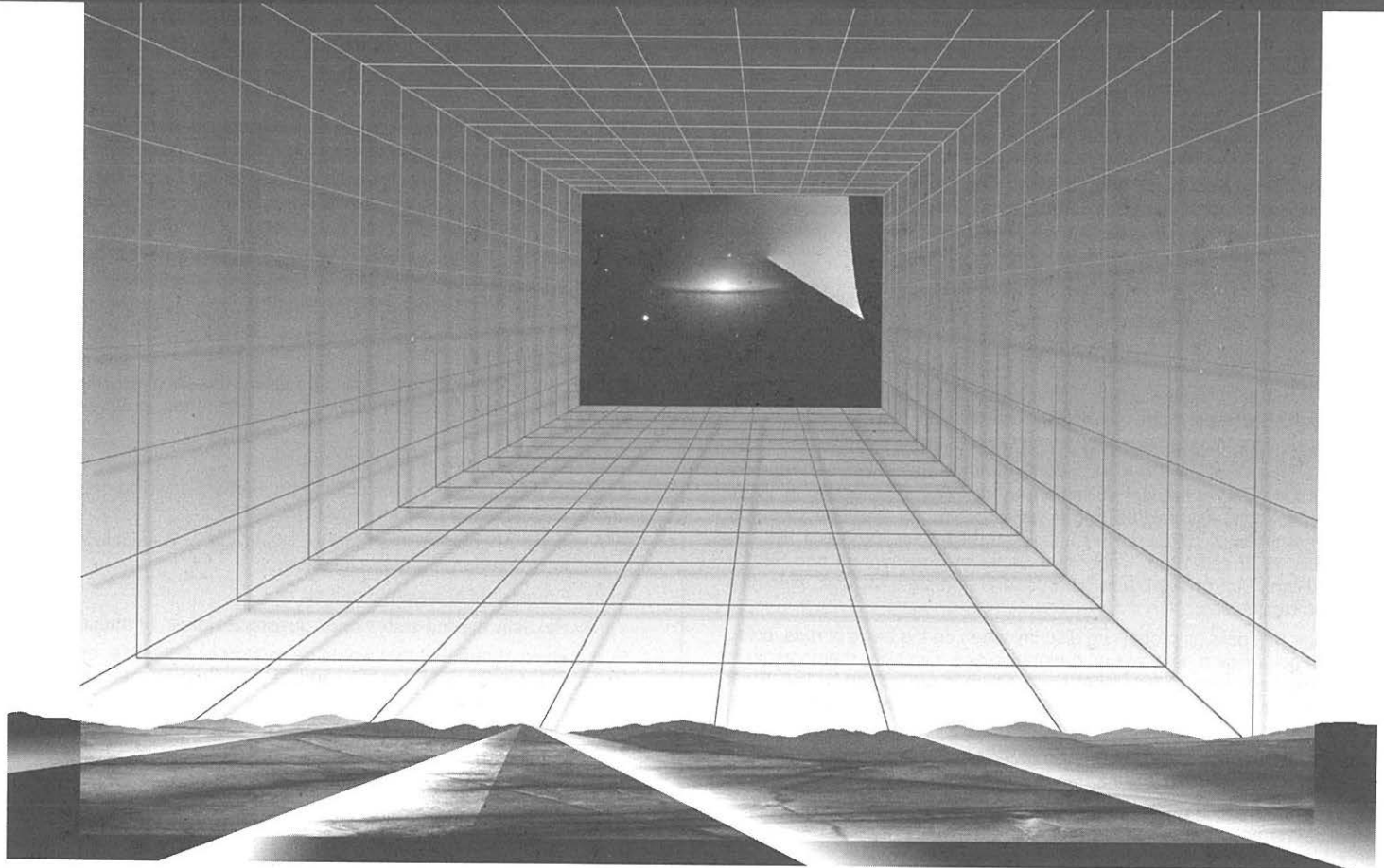
### SHEET METAL

SML 104	Punch Press and Material Preparation /4 cr. hrs./5 periods (3 lec., 2 lab)
SML 105	Strippit and Weideomatic Turret Punch Press /4 cr. hrs./5 periods (3 lec., 2 lab)

### WELDING

WLD 162	Resistance Spot Welding /4 cr. hrs./6 periods (2 lec., 4 lab)
WLD 163	Automatic GTAW Spot Welding/Silver Brazing /4 cr. hrs./6 periods (2 lec., 4 lab)
WLD 164	Laser Beam Welding /4 cr. hrs./6 periods (2 lec., 4 lab)

## Selected Policies, Governance, and Faculty



# Selected Board Policies

## Affirmative Action/Equal Opportunity

Pima County Community College District reaffirms its commitment to affirmative action and equal employment opportunity for all qualified persons without regard to race, color, national origin, religion, sex, sexual orientation, disability, age, or on the basis of membership as set forth in USERRA, or on any other basis which is proscribed by law.

It is the policy of Pima County Community College District that equal employment opportunity can only be achieved through demonstrated leadership and aggressive implementation of a viable affirmative action program. Therefore, the Pima County Community College District Affirmative Action and Equal Employment Opportunity Policy sets forth responsibilities for administrators, supervisors, faculty, staff, and all other members of the College. This policy shall be administered without regard to race, color, national origin, religion, sex, sexual orientation, disability, age, or on the basis of membership as set forth in USERRA, or on any other basis which is proscribed by law, except where gender, religion, national origin, or age is bona fide occupational requirement.

Pima County Community College District will assure full participation of all persons contracting or providing services to the College. The Board of Governors of Pima County Community College District has affirmed that the College is an equal educational/employment opportunity institution.

Discrimination is prohibited by Titles VI and VII of the Civil Rights Act of 1964 and 1991, Title IX of the Education Amendments of 1972, Sections 503 (793) and 504 (794) of the Rehabilitation Act of 1973 as amended in 1988, the Americans with Disabilities Act of 1990 (ADA), the Vietnam Veterans Readjustment Acts of 1972 and 1974, the Age Discrimination Act of 1967 as amended in 1978 and 1986, Uniformed Services Employment and Reemployment Rights Act of 1994, and other federal and state statutes, executive orders and regulations.

The College has policies prohibiting discrimination on the basis of race, color, national origin, religion, sex, sexual orientation, age, disability, membership in the uniformed services, or any other basis which is proscribed by law. Such policies apply to all educational programs, services, activities, and facilities, and to all terms and conditions of employment.

To inquire about filing a discrimination complaint, contact an intake interviewer designated to serve your campus.

For general information related to the above policies, the College's discrimination/sexual harassment complaint procedure, or the rights and protections afforded by the ADA, contact J. O. Toro, Affirmative Action Officer, District Central Office, 4905C East Broadway Blvd., Tucson, AZ, 85709-1310, (520) 206-4539. Every effort will be made to maintain the highest level of confidentiality.

## Sexual Harassment

Pima County Community College District is committed to maintaining a work and educational environment free of discrimination. In keeping with this commitment, it is the policy of Pima County Community College District that no member of the College community shall engage in sexual harassment.

Sexual Harassment is defined as unwelcome advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature when:

- A. Submission to such conduct is made explicitly or implicitly a term or condition of an individual's employment or status in a course, program or activity;
- B. Submission to or rejection of such conduct is used as a basis for an employment or educational decision affecting an individual; or
- C. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or educational performance or of creating an intimidating, hostile, or offensive environment for work or learning.

Matters having sexual connotation which arise as part of the legitimate educational curricula would not violate College Policy unless used in an improper manner. Examples of sexual harassment may include, but are not necessarily limited to:

- A. Physical assault;
- B. Direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, grades, or letters of recommendation;
- C. Direct propositions of a sexual nature;
- D. Subtle pressure for sexual activity, an element of which may be conduct such as repeated and unwanted staring;
- E. A pattern of conduct intended to discomfort or humiliate, or both, that includes one or more of the following:
  - (i) Comments of a sexual nature; or
  - (ii) Sexually explicit statements, questions, jokes, or anecdotes;
- F. A pattern of conduct that would discomfort or humiliate, or both, a reasonable person at whom the conduct was directed that includes one or more of the following:
  - (i) Unnecessary touching, patting, hugging, or brushing against a person's body;
  - (ii) Remarks of a sexual nature about a person's clothing or body; or
  - (iii) Remarks about sexual activity or speculations about previous sexual experience;
  - (iv) The display in the work or educational arena of sexually suggestive objects or pictures.

Any member of the College community who believes that the actions or words of any other member of the College community constitute unwelcome harassment has a responsibility to report the complaint as soon as possible to the appropriate individual, listed in the College's *Schedule of Classes*, catalog, or the Affirmative Action Key Policies and Procedures booklet.

#### ADA & Equal Opportunity Discrimination Intake Interviewers

##### Community Campus

Mike Carter 206-6599  
Nancy Thompson 206-6574

##### Desert Vista Campus

Jan Gilbert 206-5100  
Linda Hock 206-5126

##### Downtown Campus

Trish Anquilo 206-6320  
MaryJane Bojorquez 206-6269  
Sean Mendoza 206-6356  
Tony Taylor 206-6128

##### East Campus

Reggie Demic 206-7833  
Terry Hawkins 206-7807

##### West Campus

William Fisher 206-6696  
Eddie Jo Maxey 206-6661  
Laurie Schladweiler 206-6821  
Bodel Romero 206-6030  
Rosa Valenzuela 206-6031

##### District Central Office

Mike Baker 206-2706  
Sylvia Ortega 206-4953  
Rossiland Ruiz 206-4740

#### Americans with Disabilities Act

The PCC Board of Governors endorses the philosophy of all state and federal laws providing for equal employment opportunity.

Whereas, now the Congress of the United States has passed a new law, the Americans with Disabilities Act (ADA), to provide "a clear and comprehensive mandate for the elimination of discrimination against individuals with disabilities," and,

Whereas, this governing board endorses the philosophy that no qualified individual should be excluded from jobs, services, activities, or benefits based upon disabilities over which they have no control; and,

Whereas, it is the desire of this governing board to make clear its commitment that the Pima County Community College District shall comply with the provisions of the Americans with Disabilities Act;

Now, therefore, be it resolved that the Pima County Community College District, acting through its governing board in this resolution, hereby declares its support of the Americans with Disabilities Act and its corporate intention to comply with the terms thereof, and further, hereby directs the Chancellor of the District to formulate and implement a plan to assure compliance with the terms of said act.

#### Equal Educational Opportunity Policy

The Board of Governors affirms that the Pima County Community College District is an equal educational opportunity institution. In support of this commitment, the Board of Governors authorizes and directs the Chancellor to implement regulations and procedures to facilitate opportunity for equal access to, retention in, and completion of College educational programs.

## State Board of Directors for Community Colleges of Arizona

Chairman: T. O. Beach, Yuma County 2001  
Vice Chairman: Patrick K. Carlin, Mohave County 2001  
Immediate Past Chairman: Thava T. Freedman, Navajo County 2000  
Secretary: Theodore C. Fichtl, Cochise County 2002  
Treasurer: Nick Balich, Maricopa County 2004  
Executive Committee Member-at-Large:  
Michael G. Clifton, Coconino County 2003

#### Members:

Apache County, La Verl E. Ashcroft 2005  
Cochise County, Theodore C. Fichtl 2002  
Coconino County, Michael G. Clifton 2003  
Gila County, Byron K. Mills 2003  
Graham County, Lois W. Claridge 2002  
Greenlee County, Dixie Zumwalt 2006  
La Paz County, Evangelina "Conkie" Hoover 2005  
Maricopa County, Nick Balich 2004  
Mohave County, Patrick K. Carlin 2001  
Navajo County, Thava T. Freedman 2000  
Pima County, J. Peter Hershberger 2005  
Pinal County, Alfred "Bud" Anderson 2006  
Santa Cruz County, Lourdes Moreno-Jeong 2000  
Yavapai County, Karen F. Rizk 2004  
Yuma County, T. O. Beach 2001  
Superintendent of Public Instruction: Jennifer Mabry  
Arizona Board of Regents: Chris Herstam



# Pima County Community College District Board of Governors

Dr. Theodore H. Koff	District 1, Dec. 2002
Richard G. Fimbres	District 2, Dec. 2004
Gerald J. Bishop	District 3, Dec. 2000
Scott Stewart	District 4, Dec. 2004
Marty Cortez	District 5, Dec. 2000

## College District Administrators

Dr. Robert D. Jensen, Chancellor

Carol A. Gorsuch, Senior Vice Chancellor for Educational Planning and Development

Charlotte A. Fugett, Vice Chancellor for Human Resources

John Gabusi, Vice Chancellor for Enrollment Services and External Relations

Stephen G. Garcia, Vice Chancellor for Finance and Administrative Services

Jana B. Kooi, Campus President, Community Campus

Dr. Miguel A. Palacios, Campus President, Desert Vista Campus

Dr. Mary Retterer, Campus President, East Campus

Dr. Noelia Vela, Campus President, Downtown Campus

Campus President, West Campus (search under way)

## District Central Office

### Office of the Chancellor

**Dr. Robert D. Jensen, Chancellor**

B.S., M.Ed. Linfield College; Ed.D. Washington State University

**Senior Assistant to the Chancellor** (search under way)

**Dr. Wesley E. Soderquist, Special Assistant to the Chancellor**

B.S. Illinois Institute of Technology; M.B.A. University of Chicago;  
Ed.D. Loyola University

**Joseph E. Nevin, Executive Director,  
Pima Community College Foundation**

B.S. University of Montana

**Margaret A. Sprague,**

**Equal Employment Opportunity/Affirmative Action Officer**  
B.Ph. Grand Valley State College; M.Ed. University of Arizona

### Office of the Senior Vice Chancellor for Educational Planning and Development

**Dr. Carol A. Gorsuch, Senior Vice Chancellor  
for Educational Planning and Development**

B.A., M.A. University of Arizona; Ed.D. (Honoris Causa) Tucson University

**Robert G. House, Senior Assistant for Policy and Governance**

B.A. University of Texas at Austin; M.S. North Texas State University

**Dr. Marie Foster Gnage, Assistant Vice Chancellor  
for Educational Services**

B.A. Alcorn A&M College; M.A. University of Southwestern Louisiana;  
Ph.D. Florida State University

**Dr. Philip Silvers, Assistant Vice Chancellor  
for Research and Planning**

B.A., M.A. St. Paul Seminary; Ph.D. University of Arizona

### Office of the Vice Chancellor for Enrollment Services and External Relations

**Dr. John Gabusi, Vice Chancellor**

**for Enrollment Services and External Relations**

B.A. University of Arizona; Ph.D. (Honoris Causa) Lincoln University

## **Office of the Vice Chancellor for Finance and Administrative Services**

### **Stephen G. Garcia, Vice Chancellor for Finance and Administrative Services**

B.S. Northern Arizona University; M.B.A. National University

### **Jacalyn A. Askin, Assistant Vice Chancellor for Financial Operations**

B.A. Lehigh University; M.S. Georgia Institute of Technology; M.A. University of Iowa

### **Paul F. Smith, Assistant Vice Chancellor for Administrative Services and Facilities**

B.S. University of Arizona; M.S. Georgia College

### **Ann Strine, Assistant Vice Chancellor for Information Technology**

B.A. Texas Christian University; M.A. Indiana University

## **Office of the Vice Chancellor for Human Resources**

### **Charlotte A. Fugett, Vice Chancellor for Human Resources**

B.S. Longwood College; M.B.A. University of Richmond

### **Assistant Vice Chancellor for Personnel Services (search under way)**

## **Community Campus**

### **Jana B. Kooi, Campus President**

B.A. Calvin College; M.A. Western Michigan University

### **Dr. Harry P. Muir, Jr., Dean of Instruction**

B.S., M.S. University of Kansas; Ph.D. Kansas State University

### **Dean of Student Development (search under way)**

### **Dr. Johnson Bia, Dean, Center for Training and Development**

B.S., M.S. University of Arizona; Ph.D. Iowa State University

### **Carolyn C. Christian, Associate Dean of Instruction**

B.S. Bowling Green State University; M.A. Ball State University

### **Dr. Angela Zerdavis, Director, Northwest Community Learning Center**

Certificate Beijing Normal University; B.A. University of Illinois; M.A. California State University; Ed.D. Brigham Young University

## **Desert Vista Campus**

### **Dr. Miguel Palacios, Campus President**

B.A., M.A., Ph.D. University of Arizona

### **Dr. Stanley P. Witt, Dean of Instruction**

B.A., M.A., Ph.D. University of Arizona

### **Daniel Chacón, Dean of Student Development**

B.S. Arizona State College; M.Ed. Northern Arizona University

## **Downtown Campus**

### **Dr. Noelia Vela, Campus President**

B.A., M.A. Illinois State University; C.A.S. San Diego State University; Ed.D. University of San Diego

### **Dr. Richard E. Durán, Dean of Instruction**

B.A., M.A. Adams State College; Ed.D. University of Northern Colorado

### **Dr. Eleanor Brown, Dean of Student Development**

B.A. University of Alaska; M.A., Ph.D. University of Texas at Austin

### **Juanita L. Gutierrez, Division Dean Student Support Services**

B.A. Metropolitan State College of Denver; M.A. University of Denver

### **Dr. John J. Merren, Instructional Division Dean Science and Applied Technology**

B.S., B.A., M.A. Lamar University; M.Ed., Ph.D. University of Arizona

### **Dr. Suzanne L. Miles, Division Dean Mathematics and Communication Arts**

B.S. Northwestern University; M.A. Arizona State University; Ph.D. University of Arizona

### **Dr. Rosemarie Schulz, Division Dean Business, Liberal Arts, and Visual Communication**

B.A., M.S. University of Wisconsin; Ph.D. University of Wisconsin

## East Campus

### **Dr. Mary Retterer, Campus President**

B.A., M.B.A. California State University-San Bernardino;  
Ph.D. University of Texas-Austin

### **Dean of Instruction** (search under way)

### **Dean of Student Development** (search under way)

### **Dr. Barbara C. Ganz, Dean/Director of Public Safety and Emergency Services Institute**

B.A., M.A. Arizona State University; Ed.D. Northern Arizona University

### **Instructional Division Dean for Educational Services** (search under way)

## West Campus

### **Campus President** (search under way)

### **Dr. Kathleen E. Assar, Campus Vice President/Dean of Educational Services**

B.S. West Chester University; M.A. George Washington University;  
Ed.D. Catholic University of America

### **Dr. Sylvia M. Lee, Dean of Student Development**

A.A.S. Pima Community College; B.A., M.Ed. University of Arizona;  
Ph.D. Arizona State University

### **Hoyt L. Keeney, Dean of Athletics/Fitness and Sport Sciences**

B.A., M.Ed. Oregon State University

### **Lucy A. Brajevich, Instructional Division Dean Health Related Professions**

B.S. Northern Arizona University; M.Ed. University of Arizona

### **Michael B. Curry, Instructional Division Dean Business, Computer, and Human Sciences**

B.S. Wheeling College; M.M. Utah State University

### **Mary E. Elasowich, Division Dean Student Support Services**

B.A. University of Massachusetts; M.A. Assumption College

### **Dr. Louise S. Haugh, Instructional Division Dean Instructional Support Services**

B.A. University of Kentucky; M.Ed. University of Arizona;  
Ed.D. Brigham Young University

### **Instructional Division Dean Arts** (search under way)

## 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 expand 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

## 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 Central Office, the College district, and the community.

Emily McMillin	1996
Harold Thompson	1996



## Pima Community College Faculty

**Cynthia A. Adams, Fitness and Sport Sciences (1990)**

B.S. Salem College; M.S. State University of New York-Cortland

**Alice L. Adamson, Mathematics (1992)**

B.S. Maryville College; M.S. California State University-Hayward

**Prashant S. Agarwal, Communication Graphics (1997)**

M.Des. Indian Institute of Technology; M.A. Purdue University

**Javier Alcaraz, Spanish and French (1978)**

B.A. Montezuma Pontifical College; M.A. Universidad Jaime Balmes;

M.Ed. St Mary's University of Minnesota

**Barbara M. Anderson, Counseling and Guidance (1970)**

A.A. Cochise College; B.S., M.Ed. University of Arizona

**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

**Cynthia P. Arcala, Nursing (1988)**

B.S.N. Philippine Women's University; M.S. University of Michigan

**Dr. Cynthia A. Arem, Psychology (1975)**

B.A. City University of New York-Brooklyn; M.S. City University of New York-City College; Ph.D. University of Arizona

**Barbara C. Armenta, Mathematics (1991)**

A.S. Pima Community College; B.S. Indiana University of Pennsylvania; M.Ed. University of Arizona

**Antonio Arroyo, Librarian (1996)**

A.A. Fullerton College; B.A. Whittier College; M.S. California State University-Fullerton

**Gun E. Bailey, Speech (1973)**

B.A., M.A. University of Arizona

**Kay S. Baker, Nursing (1978)**

B.S.N. Arizona State University; M.Ed., M.S.N. University of Arizona

**Dr. Robert K. Baker, Librarian (1990)**

B.A. California State University-Northridge; M.A., M.L.S. University of California-Los Angeles; Ed.D. Northern Arizona University

**Pamela A. Barnes, Writing (1974)**

B.A. Cedar Crest College; M.A. Seton Hall University; M.Ed. University of Arizona

**Stewart F. Barr, IV, Humanities and Philosophy (1986)**

A.A. Pima Community College; B.A., M.A. University of Arizona

**Marie I. Barrentine, Nursing (1990)**

B.S.N. State University of New York-Plattsburgh; M.R.C. Arkansas State University; M.S.N. University of Colorado

**Dr. Tori R. Basford, Computer Science (1978)**

B.S.E.E. University of Texas-Austin; M.S.E.E. New York University; Ph.D. Columbia University

**Dan L. Beeson, Electronics (1985)**

B.S. Southeast Missouri State University

**Robert P. Beitz, Psychology (1979)**

A.S. Mercer County Community College; B.A., M.Ed., Ed.S. University of Arizona

**Sandra M. Bejarano, Environmental Technology (1993)**

B.S. University of Arizona; M.Ed. Northern Arizona University

**Dr. Theria Beverly, Reading (1975)**

B.A. Clark College; M.Ed. University of Arizona; Ed.D. University of Sarasota

**Dr. David R. Bishop, Philosophy (1997)**

B.A., M.A. St. Louis University; M.A. Institute of Transpersonal Psychology; M.Div. Loyola University; Ph.D. Pacific Western University

**Dr. Carlos A. Blanco, Educational Support Faculty (1996)**

B.A., M.A., Ph.D. University of Arizona

**Kathy A. Blicharz, Computer Science (1982)**

A.A.S. Pima Community College; B.S., M.Ed. University of Phoenix

**Dr. Charles A. Bollong, Anthropology and Archaeology (1992)**

B.A. Simon Fraser University; M.A. University of Otago; M.A., Ph.D. Southern Methodist University

**C. Lynn Bonner, Speech (1971)**

B.A., M.A. Western Michigan University; M.A. Northern Arizona University

**Samuel P. Borah, Mathematics (1987)**

B.S. Hardin Simmons University; M.A. Appalachian State Teachers College

**Dr. Johnny W. Bowens, Sociology (1970)**

B.A. Dillard University; M.Ed. University of Arizona; Ph.D. Union Institute

**Dr. Aristeo Brito, Spanish (1970)**

B.A. Sul Ross State College; M.A., Ph.D. University of Arizona

**Monica J. Brito, Spanish (1992)**

B.A. St. Francis College; M.A. University of Arizona

**Dr. Fé Carol P. Brittain, Languages (1977)**

B.A. Florida State University; M.A. Middlebury College; Ph.D. University of Arizona

**Dr. Dillard S. Broderick, Computer Science (1974)**

B.S., M.S. Brigham Young University; Ph.D. Arizona State University

**Dr. Richard L. Brodesky, Writing (1978)**

B.A. Brandeis University; M.A., Ph.D. Harvard University

**Gigi D. Brown, Design (1990)**

B.S. University of Arizona

**Yvonne M. Brown, Mathematics (1992)**

B.S. University of Southern Colorado; M.A. University of Arizona

**Galen Brubaker, Building Technology (1997)**

B.S. Wayland Baptist University; M.S. Troy State University

**David K. Bruce, Administration of Justice (1975)**

B.S. Central Missouri State University; M.S. California State University-San Jose

**Kelly F. Brumbaugh, Automotive (1992)**

A.S. Pima Community College; B.S. Northern Arizona University; M.A. Chapman University

**Nancy E. Buchanan, Librarian (1974)**

B.A., M.L.S., M.A. University of Arizona

**Ellyn E. Bulikowski, Nursing (1991)**

B.S.N. University of Massachusetts; M.S.N. Emory University

**Nicholas C. Busch, Biology (1969)**

B.A. Sonoma State College

**Ellen F. Caldwell, Mathematics (1983)**

B.A. Randolph Macon Women's College; M.A. University of Wyoming

**Dr. Anne E. Campbell, Reading (1995)**

B.A. University of New Hampshire; M.Ed. University of Hartford; Ph.D. University of Florida-Gainesville

**Dr. Teresa Isabella Daza Campbell, Business (1998)**

B.S., M.S., Ph.D. University of Arizona

**Elma Carrillo, Spanish (1995)**

B.Ed., M.Ed. University of Arizona

**Dr. Jefferson M. Carter, Writing (1977)**

B.A. Pomona College; M.A., Ph.D. University of Arizona

**P. Michael Carter, Educational Support Faculty (1977)**

B.A. University of Arizona; R.T. Tucson Medical Respiratory Therapy; M.Ed. Northern Arizona University



**Guadalupe Castillo, History (1991)**

B.A., M.A. University of Arizona

**Sandra J. Chan, Librarian (1982)**

A.A. Pima Community College; B.A., M.L.S. University of Arizona

**Anthony M. Chana, Counselor (1971)**

A.A. Phoenix College; B.A. Arizona State University

**Gustavo A. Chavez, Counselor (1982)**

A.A. Mesa Community College; B.A., M.A. Arizona State University

**Dr. Kenneth R. Chiaro, History (1975)**

B.A., M.A., Ph.D. University of Arizona

**Dr. Ann A. Christensen, Biology (1992)**

D.C.E. Mariaopolis College; B.S., M.S. Concordia University;  
Ph.D. Queens University

**Dr. Nancy G. Christie, Psychology (1993)**

B.A., M.S., Ph.D. University of Arizona

**Bruce C. Clark, Art (1992)**

B.F.A. University of Georgia; M.F.A. University of Arizona

**Robert C. Coleman, Computer Science (1985)**

B.S., M.P.A. University of Arizona

**J. Scott Collins, Mathematics (1994)**

B.S., M.S. Virginia Polytechnic Institute

**Doris J. Conley, Counseling (1997)**

A.A. Pima Community College; B.S., M.S. University of Arizona

**Martha L. Connolly, Reading (1990)**

B.S. University of Dayton; M.Ed. University of Arizona

**Victoria H. Cook, History (1997)**

B.A., M.A. University of Arizona

**Alan E. Coons, Mathematics (1983)**

A.A. Cochise Community College; B.S., M.S. Northern Arizona University;  
M.B.A. University of Arizona

**Dr. Al L. Cooper, Spanish (1994)**

A.A. Bakersfield College; B.A. University of Nevada; M.A.,  
Ph.D. University of Arizona

**Timothy M. Cote, Aviation Structural Repair (1992)**

**Ronald D. Crabtree, Humanities (1970)**

B.A., M.A. Washington University

**Barbara J. Crowley, Dental Assisting Education (1975)**

C.D.A. Certified Dental Assistant; B.A., M.Ed. University of Arizona

**Kathleen Fockler Curley, Librarian (1991)**

B.A., M.A., M.L.S. University of Arizona

**John P. Dailey, Hospitality (1992)**

B.S. Bryant College; M.A. University of Phoenix

**Dr. Arnold C. Davidson, Writing (1978)**

B.S., M.A. Emporia State University; Ed.S. University of South Dakota;  
Ph.D. Florida State University

**Dr. Daniel Davidson, Physics (1971)**

B.S. University of Rochester; Ph.D. University of Arizona

**Dr. June F. Davidson, Counselor (1981)**

B.S. University of Rochester; M.Ed., Ph.D. University of Arizona

**Dr. Patricia J. Davis, Writing and Literature (1971)**

B.A. University of Texas; M.A., Ph.D. University of Wisconsin

**Susana De La Pena, Writing (1995)**

B.A., M.Ed. University of Arizona

**Dr. James De La Rosa, Biology (1994)**

B.S. University of Southern California; M.S., Ph.D. Cornell University

**Francisco O. Delgado-Duran, Landscape Technology (1991)**

B.S. University of Chihuahua; M.S. University of Arizona

**Margaret 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

**Randall D. Dings, Radiologic Technology (1998)**

B.S. Indiana University

**Robert C. Douglas, Dental Laboratory Technology (1975)**

C.D.T. National Association of Dental Laboratories

**Allan E. Doyle, Accounting and Business (1977)**

B.A. John Hopkins University; M.B.A. New York University; M.A. University  
of Arizona; C.P.A. Certified Public Accountant

**David Druml, Computer Science (1998)**

B.A. Milwaukee School of Engineering; M.S. University of Phoenix

**Roggie H. Edberg, Counselor (1989)**

B.A. Mills College; M.Ed. University of Arizona

**Joellyn R. Engelmann, Respiratory Therapy (1995)**

A.A. Des Moines Community College; B.A. Drake University;  
M.Ed. Northern Arizona University

**Dr. Michael S. Engs, Counselor (1997)**

B.A. College of William and Mary; M.Ed. University of Arizona;  
Ed.D. Northern Arizona University

**Michael A. Enis, Welding (1970)**  
 Cert. American Welding Society; A.A. Pima Community College

**Vernone H. Erickson, Nursing (1992)**  
 B.S.N. Gustavus Adolphus College; M.S. University of Arizona

**Donald W. Evans, Theater (1990)**  
 B.A. Southern Illinois University; M.F.A. University of Arizona

**J. Philip Evans, Counselor (1990)**  
 B.A., B.A., M.Ed. University of Arizona

**Christina B. Felty, Art (1997)**  
 B.F.A. Virginia Commonwealth University; M.A. University of Arizona

**Roxane Fenicle-Funckes, Sign Language (1992)**  
 B.A. Gallaudet University; M.A. Western Maryland College

**Francisco Fernandez, Spanish (1981)**  
 B.S., M.Ed. University of Arizona

**Julia B. Fiello, Biology (1994)**  
 B.A. Oberlin College; M.A. University of Arizona

**Dr. Brad C. Fiero, Biology (1990)**  
 B.S. Colorado State University; M.S. Oregon State University;  
 D.A. Idaho State University

**María Luisa Figueroa, Spanish and English as a Second Language (1979)**  
 B.A., M.A. University of Arizona; M.A. Southern Illinois University

**Margaret K. Files, Writing (1987)**  
 B.A. Kalamazoo College; M.A. University of Illinois

**Georgianne R. Fimbres, Design (1971)**  
 B.S., M.Ed. University of Arizona

**Paul A. Flasch, Mathematics (1994)**  
 B.S. St. John's University; M.S. North Dakota State University

**Rita V. Flattley, Psychology (1991)**  
 A.A. Pima Community College; B.A., M.Ed. University of Arizona

**Joyce A. Flieger, Dental Hygiene Education (1991)**  
 B.S.D.H. University of Southern California; M.P.H. University of Michigan

**Dr. Doris J. Ford, Psychology (1997)**  
 B.S., M.Ed. Wayne State University, Ph.D. University of Illinois

**Sally J. Ford, Fitness and Sport Sciences (1989)**  
 B.A. McKendree College; M.S. Eastern Illinois University

**Terry Forster, Machine Tool (1997)**  
 A.A.S., A.G.S. Pima Community College

**Vicci L. Fox, Reading (1993)**  
 B.S. North Texas State University; M.Ed. University of Arizona

**Anne R. Franklin, Mathematics (1990)**  
 B.A. Goddard College; M.A. University of Arizona

**Dr. Richard H. Fridena, Sociology (1981)**  
 B.A. University of Arizona; M.S.W. Arizona State University;  
 Ph.D. University of Arizona

**Margaret M. Fried, Nursing (1982)**  
 B.S.N. College of St. Teresa; M.A. University of Washington

**Richard J. Frontain, Writing (1976)**  
 B.A. Iona College; M.Ed. University of Arizona

**Beverly M. Furlow, Writing (1978)**  
 B.A., M.Ed. University of Tennessee; M.A. Governors State University;  
 C.A.S. University of Chicago

**Duff C. Galda, English as a Second Language (1997)**  
 A.A. Glendale Community College; B.S., M.Ed., M.Ed. Northern  
 Arizona University

**David W. Gallagher, Psychology (1971)**  
 B.A., M.Ed. University of Arizona

**Sharon L. Gardlund, Chemistry (1994)**  
 B.S. Chestnut Hill College; M.S. University of Arizona

**Simone Gers, Writing (1998)**  
 B.A., M.A. University of Houston-Clear Lake

**Joan C. Gilbert, Nursing (1989)**  
 B.S. Skidmore College; M.A. New York University

**Dr. Mary K. Gilliland, Anthropology (1989)**  
 B.A. Bryn Mawr College; M.A., Ph.D. University of California-San Diego

**James R. Goff, Physics (1971)**  
 B.A. Nebraska Wesleyan University; M.S. Case Western Reserve  
 University

**Bonnie J. Golden, Counselor (1987)**  
 A.A. Southwest College; B.S. University of Illinois; M.Ed. University of Arizona

**C. Barclay Goldsmith, Theater (1970)**  
 B.A. Stanford University; M.F.A. Carnegie Mellon University

**Darryl Graham, History (1995)**  
 B.A. Queens College; M.A. Long Island University; M.A. University  
 of Wisconsin

**Gretchen A. Graham, Librarian (1990)**  
 B.A. University of Nevada-Las Vegas; B.A. Eastern Washington University;  
 M.Libr. University of Washington

**Lisa M. Grenier, Mathematics (1979)**  
B.A. Kutztown State College; M.A. University of Arizona

**Richard J. Griebel, Computer Science (1998)**  
B.S., M.S. Pennsylvania State University; M.B.A. University of Phoenix

**Lori Grimm, Reading (1996)**  
B.A. Fort Lewis College; M.A. University of Arizona

**Thomas C. Grissom, Marketing and Management (1981)**  
B.S., M.Ed. University of Arizona

**Anthony S. Guglielmino, Aviation Technology (1971)**  
A.T. Northrop Institute of Technology; B.A. Prescott College; Cert. FAA, AP, I.A., D.M.E., ASC

**Guadalupe A. Gutierrez, Nursing (1989)**  
B.S.N. University of Arizona

**Ronald D. Hale, Automotive (1997)**  
A.A.S. Pima Community College

**Nancy W. Hamadou, English as a Second Language (1997)**  
B.A. Indiana State University; M.A. Ohio University

**Roxanne S. Harley, Counselor/Human Development Education (1980)**  
B.A. Grand Valley State University; M.Ed. University of Arizona

**Betty G. Harris, Art (1977)**  
B.S. Pratt Institute; M.F.A. University of Arizona

**Clinton J. Harrold, Business (1987)**  
B.S. University of Arizona; M.Ed. Northern Arizona University; CPA, C.M.A.

**Christopher R. Hawken, Fitness and Sport Sciences (1995)**  
B.H. University of London; M.A. University of California-Berkeley

**Dr. Donald S. Hayes, Physics (1991)**  
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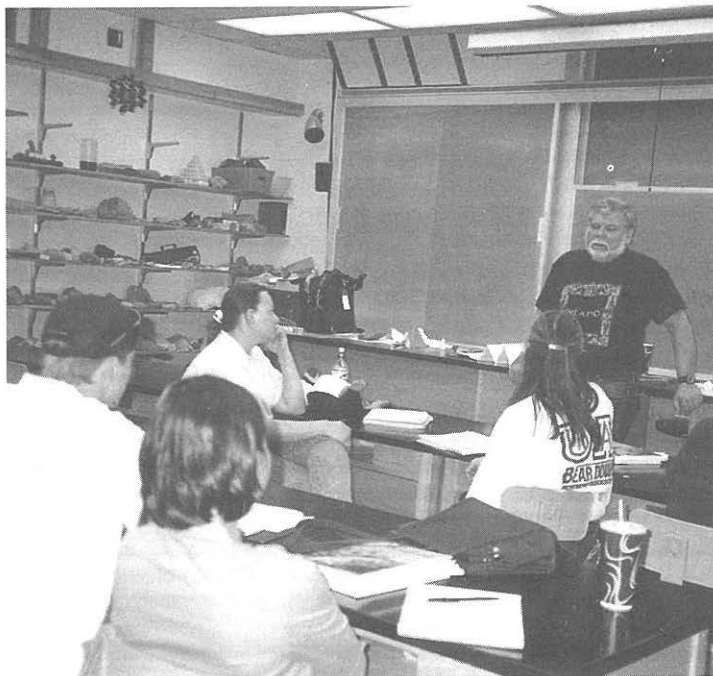
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