

Pima Community College Catalog 79/80

Pima County Community College District



To Serve the Community
Pima County Community College District
1979-80

COLLEGE AND DISTRICT OFFICES

2202 W. Anklam Road
Tucson, Arizona 85709
(602) 884-6666

WEST CAMPUS

2202 W. Anklam Road
Tucson, Arizona 85709
(602) 884-6666

DOWNTOWN CAMPUS

50 W. Speedway Boulevard
Tucson, Arizona 85705
(602) 884-6788

COMMUNITY CAMPUS (Office)

1225 N. 10th Avenue
Tucson, Arizona 85705
(602) 884-6940

EAST EDUCATION CENTER

7830 E. Broadway
Tucson, Arizona 85710
(602) 884-6580

COMMUNITY SERVICES

219 W. Mabel Street
Tucson, Arizona 85705
(602) 884-6720

TUCSON CAREER SKILL CENTER

55 N. 6th Avenue
Tucson, Arizona 85701
(602) 623-8456

While 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.

Pima County Community College District complies with all applicable state, federal and local regulations. The College does not discriminate against qualified individuals on the basis of sex, race, creed, color, national origin or handicap in the education programs or other activities.

The EEO Office for Pima Community College is on the West Campus in the Administration/Library Building. Telephone number is 884-6815.

Students are expected to act reasonably and to observe all federal, state and local laws and all Governing Board policies and regulations.

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To serve the community

Pima County Community College District

The multi-campus college district serves a population of 470,000 residing within the 9,240 square miles of Pima County through two campuses, an education center, 50 off-campus instructional locations, a community services program and a career skill center.

One campus is located on Anklam Road in west Tucson and the other is in the downtown Tucson area near Stone and Speedway. An East Education Center was opened at East Broadway and Pantano Road to better serve the eastern portion of the city. The Community Campus offers credit courses at off-campus centers throughout Tucson and Pima County, principally during evening hours. Some of these courses also are offered in Santa Cruz County which currently does not have a community college. Community Services offers credit-free classes throughout the community. Pima Community College, in addition, is responsible for the Tucson Career Skill Center.

The West Campus opened in the fall of 1970 and is a fully comprehensive community college campus providing a curriculum of general education, college transfer, and occupational education courses, and facilities which include a student center, a fine arts building and a complete library or Learning Resource Center. It is the only campus with a gymnasium and an athletic program.

The Downtown Campus opened in the fall of 1974 and has a comprehensive study program including general education, college transfer, and occupational education. General education and college transfer courses cover areas such as mathematics, English, reading, writing, sociology, history, business and psychology. Occupational programs include secretarial studies, automotive technology, air conditioning, sheet metal, machine tool technology, welding, data entry, advertising art, graphic technology and health careers.

In most instances, students can complete their entire program of study at either the West Campus or the Downtown Campus. However, students may take only a portion of their programs at one campus and the remainder at the other campus, at the education center, or at an off-campus location.

The Community Campus, established in 1975, utilizes the facilities of the community including the public school system, various agencies and neighborhood centers in the Tucson vicinity and in Ajo, Marana, Sells and Nogales. A wide variety of general education, college transfer and general interest courses are offered.

The East Education Center, which opened in the fall of 1976, offers introductory courses in a wide range of subject areas, some advanced general educational courses and selected courses in occupational programs. Advising and bookstore services are available.

Community Services concentrates on the College's credit-free activities and programs at approximately 30 community locations. These include family life education, credit-free women's programs, senior citizens education, special projects, general interest classes, seminars and workshops.

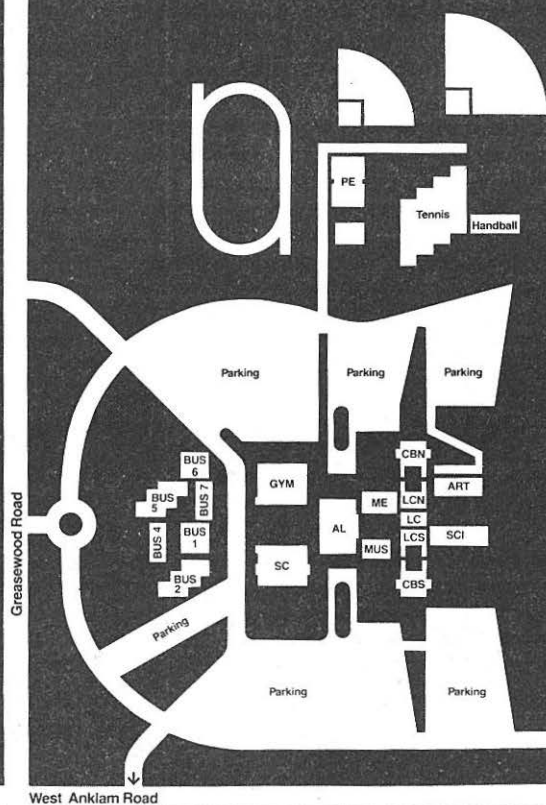


The Pima Community College logo was designed by Mr. Gill C. Kenny, Coordinator of District Graphics, in 1969.

It is composed of a cluster of stylized representations of the letter "P."

The orientation of the award-winning design is simplified by the placement of one of the stylized letters at the top.





West Campus

The West Campus is located in the foothills of the Tucson Mountains, three miles west of Tucson's central business district. The 273-acre site is bounded by Anklam Road on the south, Speedway Boulevard on the north, Greasewood Road on the west and La Cholla Boulevard on the east. Facilities include 11 permanent buildings and six relocatable or portable buildings. District offices currently are housed at the West Campus.

SC—Student Center

- Admissions and Registrar
- Art Exhibition Area
- Cafeteria
- Career Resource Center
- Cashier
- Counseling
- Financial Aids
- Health Services Office
- Placement Services
- Student Information and Activities
- Student Organizations
- Veterans Office Services
- Women's Center

GYM—Gymnasium

PE—Physical Education Annex

AL—Library/Administration

- District Administration Offices
- Library and Instructional Support
- West Campus Administration Offices

MUS—Music

ME—Math/Electronics

LCN—Alternative Learning Center—North

LCS—Alternative Learning Center—South

LC—Lecture Center

CBN—Classroom Building—North

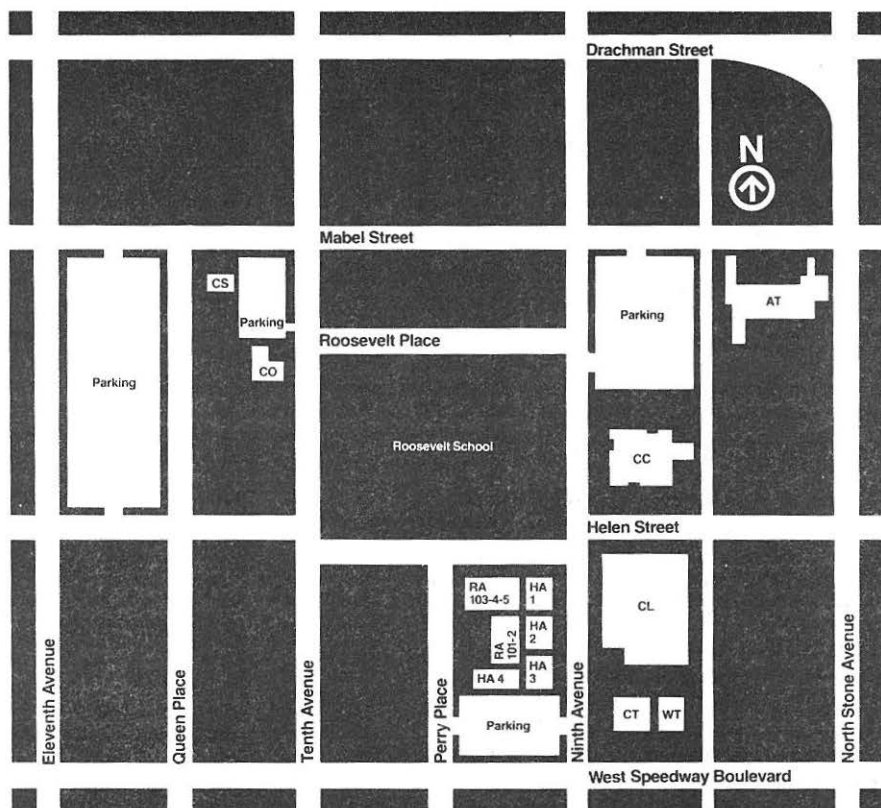
CBS—Classroom Building—South

SCI—Sciences

ART—Arts

Area R—Relocatable Buildings

- BUS 1—Business Relocatables
- BUS 2—Business Relocatables
- BUS 4—Business Relocatables
- BUS 5—Business Relocatables
- BUS 6—Business Relocatables
- BUS 7—Business Relocatables



Downtown Campus

The Downtown Campus is located on a 13-acre site in the vicinity of Stone Avenue and Speedway Boulevard in Tucson and currently consists of 11 buildings housing classrooms, laboratories and support services designed to meet the needs of its students.

AT—Automotive Technology

Automotive Technology Faculty Offices

Classrooms

Laboratories

CC—Campus Center

•1st Floor

Bookstore

Food Services

Student Services

Counseling and Advisement

Financial Aid Services

Veterans Advising

Student Activities

•2nd Floor

Alternative Learning Center (ALC)

Library (LRC)

Meeting Rooms

CL—Classroom Building

Administrative Offices

Air Conditioning

Allied Health Science

Classrooms

Faculty Offices

Laboratories

Machine Tool Technology

Office Education

Registration and Admission

Sheet Metal

CT—Classroom Technology Building

Advertising Art

Classrooms

Educational Development Office

Graphic Technology

Multipurpose Laboratory

HA-1—Extended Day Programs

HA-2—Restrooms

HA-3—Physical Plant

HA-4—Faculty Offices

RA—Classrooms

Data Entry Laboratory

Classrooms

WT—Welding Technology

Laboratories

Welding Faculty Offices

CO—Community Campus Office

CS—Community Services

East Education Center

The East Education Center is located at the corner of Broadway and Pantano Road on Tucson's east side. Occupying one of the buildings in the Eastside Executive Park, the Center houses classrooms, laboratories and support services.

EEC—East Education Center

- Classrooms
- Laboratories
- Administrative Offices
- Advising and Counseling
- Allied Health Service
- Alternative Learning Center (ALC)
- Faculty Offices
- Library (LRC)
- Registration and Admissions
- Educational Development
- Educational Support Services
- Financial Aid Services
- Student Activities
- Veterans Advising
- Bookstore

1979–80

Pima County Community College/Academic Calendar

Fall Semester (1979)

Advising/Registration Period	
Continuing Students by Appointments	Aug 6–13 (M–Th)
Pre-applied New Applicants by Appointments	Aug 14–15
Open to All Students who have not registered	Aug 16–24
<i>No Advising Available</i>	Aug 20
Fall Classes Start	Aug 27
Late Registration and Drop/Add	Aug 27–31
Labor Day Holiday	Sept 3
Advising for Spring Semester by Appointment	Oct 16–Dec 14
Applications Due for Students Completing Programs & Degrees	Nov 1
Spring Registration Period	
Continuing Students by Appointments	Nov 5–16
Veterans Day Holiday	Nov 12
Early Drop/Add for Spring Semester	Nov 28
Thanksgiving Day Holiday	Nov 22–24
Evaluation/Assessment/Exam Week	Dec 17–21
Final Grades Due	Dec 21
Fall Semester Ends	Dec 21

Spring Semester (1980)

Advising/Registration Continues	
New Pre-applied Students by Appointments	Jan 10
Open to All Students who have not Registered	Jan 11–16
Spring Classes Start	Jan 17
Late Registration and Drop/Add	Jan 17–23
Rodeo Days Holiday	Feb 21–22
Applications Due for Students Completing Programs & Degrees	Mar 1
Spring Vacation	Mar 31–Apr 6
Evaluation/Assessment/Exam Week	May 12–16
Graduation	May 15
Final Grades Due	May 16
Spring Semester Ends	May 16

Summer Session (1980)

Summer Advising/Registration

Open to All Students

May 5-29

First Five-Week Session (A Session)

Advising/Registration Continues

Jun 4-5

Classes Begin

Jun 9

Independence Day

Jul 3

Classes End

Jul 10

Second Five-Week Session (B Session)

Advising/Registration Continues

Jul 9-10

Classes Begin

Jul 14

Classes End

Aug 14

Eight Week Session (C Session)

Advising/Registration Continues

Jun 4-5

Classes Begin

Jun 9

Independence Day

Jul 3

Classes End

Jul 31

1979

AUGUST

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1980

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AUGUST

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Pima Community College Philosophy

The proper functioning of a democratic society and the well-being of individuals depend on the opportunity for individuals to develop their abilities in accordance with their own chosen goals. To achieve this end, Pima Community College believes education should be designed as a continuous process, developing an awareness of individuals, both of themselves and their environment, and thus, preparing them to function more effectively in a highly complex society.

All individuals in the college community are encouraged to take pride in their own heritage and, at the same time, to develop an awareness and appreciation of differences which stem from diverse backgrounds.

An institution committed to these ends attempts to create an atmosphere rich in a multiplicity of subject matter, materials and educational approaches. In accepting the principle of continuous and open evaluation of all activities, the College encourages all participants to make free, intelligent, and responsive choices from a wide range of alternatives.

Pima Community College's Institutional Goals

- To provide educational opportunities that facilitate human personal development.
- Develop an environment that promotes independent thinking and effective communication.
- Prepare students for entry into and appreciation of actual careers.
- Develop an instructional program that accommodates individual differences, such as, but not limited to, learning rates, aptitudes, prior knowledge, etc.
- Engender in each student a concern for excellence and a desire for continuous learning.
- Develop an institution whose total environment is dedicated to learning and open to those who desire to learn.
- Utilize the total community as a laboratory for learning.
- Contribute to the educational, social and cultural development of Pima County.
- Institute an organizational concept of defining outcomes, differentiating processes, and evaluating results for all undertakings.
- And provide for continuous college evaluation.

Functions of a Community College

Arizona law defines a community college as "an educational institution which provides a program not exceeding two years training in the arts, sciences and humanities beyond the twelfth grade of the public or private high school curriculum or vocational education, including terminal courses of a technical or vocational nature and courses beyond the basic education courses for adults."

Bringing its philosophical approach to bear on the state's definition of its mission, Pima Community College declares its functions to include:

- General education designed to increase the individual's awareness of man's knowledge and his capacity for intelligent and responsible participation in society.
- Educational programs of varying length to prepare students for useful and satisfying vocations with emphasis on community needs.

- Two years of lower division collegiate work to enable students to progress smoothly into upper division work at universities accepting transferable credits.
- Continuing education courses to satisfy the vocational and avocational aspirations of young people and adults interested in attending evening classes.
- A professional staff responsive to the needs of individuals for assistance in career guidance, academic work and personal educational counseling.
- Community services related to specific needs including cultural, recreational and general interest programs.

Accreditation

Pima Community College, which officially opened in September of 1970, received full accreditation from the North Central Association of Colleges and Secondary Schools, a national accrediting agency, during the spring of 1975.

This means the College, its programs, faculty and facilities have full recognition, and that transferable credits are accepted by four-year institutions throughout the country as well as those within the state.

In addition, special accreditation has been received or applied for in the following programs: Dental Assisting Technology, Dental Laboratory Technology, Nursing Associate Degree, Ophthalmic Dispensing Technology, Radiologic Technology and Respiratory Therapy.

College membership includes the American Association of Community and Junior Colleges and the Council of North Central Community Colleges.

History

The preliminary work of private citizen planning was started in 1964 and culminated with an election approving the formation of the Pima County Junior College District two years later.

Soon after voters gave their consent to the college district, a five-member Governing Board was appointed by the county school superintendent's office to proceed with plans for the college.

Among the actions taken by the original Board with the assistance of the citizen committees were the selection of architects, definition of educational objectives, creation of a financial plan and budget, selection of Dr. Oliver H. Laine as the first president and also selection of the 273-acre Anklam Road campus site.

An election was set for the fall of 1967 for a \$5.9 million general obligation bond issue to construct college facilities and to publicly elect a Governing Board.

Construction of the West Campus college facilities began in May, 1969. It was also during 1969 that Dr. Kenneth E. Harper succeeded Dr. Laine, first as provost and later as president of the College. Pima College opened to 3,728 students and offered 260 courses in September, 1970, with most facilities housed in temporary quarters and a portion located at a partially completed campus.

All college programs were moved to the completed 11-building campus in January, 1971. The year also saw the philosophy of taking a student from "where he is to where he might want to go" put into effect; the College's transfer courses being accepted by the three Arizona universities; and an introduction of the bilingual program.

In 1971–72, Pima received a Recognized Candidate Status as a step toward full accreditation; several classes were moved off-campus and into the community; the West Campus was completed and dedicated; various campus events were opened to the public; the number of vocational-occupational programs was increased; and the first summer session was offered. A West Campus renovation and construction project, which included the erection of seven portable buildings, also got underway to meet demands of fast growing enrollments.

On July 1, 1972, Dr. Irwin L. Spector became the third president of the Pima County Community College District.

1972–73 was a year in which a move was made to strengthen the College's administration process through reorganization of the administration structure. Fiscal procedures were revised; off-campus programs were expanded three-fold; the number of course offerings increased to 430; enrollments increased to 7,616; a downtown campus site was selected to help ease the overcrowding of facilities; an intercollegiate athletics program was given approval; steps were taken to create closer ties between the College and the community; and the College was re-named Pima Community College.

Major growth and planning occurred in 1973–74; enrollments went over the 12,000 mark; a study of facility needs and enrollment trends resulted in the Board approving a district plan for the establishment of a campus in downtown Tucson; the number of courses was increased and so were services to students and the community. Pima was one of only 11 community colleges selected for an \$850,000 federal grant to be used for advanced institutional development toward increasing student success. An intercollegiate athletics program also got underway.

Tense economic conditions in the fall of 1974 brought the defeat of a proposed \$9.5 million bond issue, but remodeling work continued at the West Campus in an attempt to gain some needed space for still growing enrollments. The Downtown Campus was opened and immediately filled to near capacity. The total enrollment for both campuses and in the off-campus program reached 17,773 by the spring of 1975. The number of courses was increased to about 900.

Pima Community College was awarded full accreditation by the North Central Association of Colleges and Secondary Schools in 1975. In 1975–76, enrollment at the West Campus reached 11,000 day and evening students. Additional land was acquired around the Downtown Campus enlarging it to a 13-acre site while enrollment reached 5,500 students. The development of an East Education Center was begun to help better serve students on Tucson's east side. Pima Community College also was designated a National Bicentennial College by the American Revolution Bicentennial Administration in Washington, D.C.

By 1976, the multi-campus district included the West Campus, the Downtown Campus, the Community Campus (off-campus credit programs) with more than 50 classroom locations throughout Pima County, the East Education Center, the Community Services credit-free program, and the Tucson Career Skill Center.

A two-year, \$5 million construction project was begun during 1976–77 with the construction of a classroom technologies building and a student center/library at the Downtown Campus and installation of additional indoor and outdoor physical education facilities at the West Campus.

The academic year 1977–78 may be described as a year of change: a change in administration and a change in the employee/employer structure with the advent of collective bargaining.

In view of the institution's steady enrollment increases, a citizen's Advisory Committee presented a report on the future facility needs of the College on May 17, 1978.

In January 1978, Michael J. Hansen, became a member of the Governing Board.

On July 15, 1978, Dr. Irwin L. Spector resigned his position as president after six years of leadership in developing the College. Concurrently, a presidential search was begun and Donald F. Klaasen was appointed as the Acting President.

The third major change was the advent of collective bargaining, making Pima College the first higher education institution in the State of Arizona to take this step. Another administrative change was the appointment of Raymond J. Stith, as executive dean of the West Campus.

Pima, in addition, was picked as one of the top five community colleges in the nation to host a National AACJC Conference in Career Education. Also a Foundation was established to support the College.

Pima continues to be the largest community college in Arizona. By the fall of 1979, it is anticipated the student enrollment will be 22,000 with 10,300 on the West Campus, 4,900 at the Downtown Campus, 3,650 at the East Education Center and 7,900 attending Community Campus classes. There is some duplication of numbers as many students take classes at more than one site. The number of courses offered in the district is about 1,000.

Admission

Pima Community College is open to students on a regular basis if they satisfy one of the following categories:

1. A graduate from an accredited high school, or
2. Have a G.E.D. Certificate of high school equivalency, or
3. Transferring from an accredited college, or
4. A non-high school graduate who is 18 years of age or older, or
5. A non-high school graduate between the ages of 16 and 18 who has not been enrolled in a high school during the previous regular semester. Students in this category must provide a written acknowledgement of withdrawal from the principal of the last school attended along with a letter of approval from their parents or legal guardians.
6. An able and ambitious student currently attending an area high school may enroll on a concurrent basis by presenting written approval of the student's principal and parents or legal guardians.

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.

Entrance Examinations: Pima does not require any college-wide entrance examination, but certain programs may require specific entrance examinations and may have prerequisites.

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.

Student Domicile Requirements

The Arizona State Board for Community Colleges complies with domicile requirements as stated in the Arizona Revised Statutes. Students are expected to abide by these requirements and provide proof of domicile.

"Domicile" means a person's true, fixed and permanent home and place of habitation. It is the place where one intends to remain, and to which one expects to return when absent without intending to establish a new domicile elsewhere.

No person shall be entitled to classification as an in-state student until domiciled in this state for one year. Except as otherwise stated in the State Board regulation R7-1-23, no person with domicile elsewhere than in this state shall be eligible for classification as an in-state student for tuition purposes.

Questions concerning domicile status or requests to change status currently recorded on a student file should be directed to the Office of Admissions at the West Campus, Downtown Campus, East Education Center or the Community Campus office. Requests for change of status must be processed before registration each term in order to clarify the fee status for that term.

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.

Local policy explains, in detail, the procedures to be used by the institution for compliance with the provisions of the Act. Copies of the policy can be obtained at the Office of Registrations and Admissions or the Office of Student Services at any campus.

Questions concerning the Family Education Rights and Privacy Act may be referred to one of the Registrations and Admissions Offices.

International Student Admission

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

Any non-citizen of the United States who has not received immigrant status is considered an international student and must meet the admission requirements listed below. For purposes of tuition and registration fees, these students pay the same tuition and fees as out-of-state students.

FULL-TIME STUDENTS—All international students seeking admission to Pima Community College as full-time students, i.e., enrolling for 12 credit hours or more, must complete and return to the International Students Admissions Office an application for admission along with a \$10 fee which is non-refundable. In addition, the student must have completed an academic program equivalent to an American secondary school, and also must demonstrate proficiency in the English language by submitting a score of 450 or better on the Test of English as a Foreign Language (TOEFL). Further information concerning examination dates and places for the TOEFL can be obtained by writing to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey, U.S.A. 08540.

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:

- Submit a bank statement which guarantees financial support;
- 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 Admissions Office at least 90 days prior to 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 prior to the beginning of the semester of enrollment.

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 different Visa than F-1 may attend part-time, i.e. enrolled 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. All international students, regardless of full-time or part-time status, must meet all appropriate immigration standards and requirements.

Veterans

Pima Community College is approved for the enrollment of veterans, dependents, and war orphans as provided under Title 38 of the U.S. Code. Students who qualify should contact the Veterans Office at one of the campuses for necessary forms prior to the start of the semester or during the registration period. It is not necessary to wait until the Certificate of Eligibility is received before contacting college officials.

A veteran or eligible person must be enrolled for 12 or more credit hours to receive full-time benefits, 9 to 11 hours for three-fourths benefits, and 6 to 8 hours for half benefits. Those enrolled for less than 6 credits will receive only the \$25 registration fee reimbursement.

If a veteran has received credit through USAFI, service schools, practical service experience, etc., it may be possible to receive equivalent credit at Pima. Contact one of the Admissions Offices for details.

All eligible persons are encouraged to visit the Veterans Office at the West Campus, Downtown Campus, East Education Center and the Community Campus office. The College's veterans program provides pre-counseling in the areas of job placement, financial assistance, and information on referrals to other agencies for further assistance.

A veteran's outreach program also is available. The study skills program provides counseling services for incoming veterans, advice on educational matters, tutoring, G.I. benefits, and information on studies offered at the college.

The following standards of progress apply to all persons receiving VA educational benefits:

All eligible persons will be requested to select, preferably with the aid of an advisor counselor, an approved program of study (listed in the College Catalog) prior to registration for classes in order to receive an educational allowance under Title 38, U.S. Code. An evaluation and approval of course selection as it pertains to the student's stated program objective will be made.

Eligible persons who have attended another college or university prior to enrollment at Pima will be asked to provide an official transcript of such records so that appropriate credit can be recorded for previous education if applicable.

Each eligible person will be required to satisfactorily complete his or her certified class load for educational benefits as determined at the end of the drop/add period each semester. Satisfactory completion of a course requires the achievement of a "C" (2.0) or better.

Educational benefits will not be paid for courses *unless they are used in computing graduation requirements*. Veterans and dependents receiving the grade of No Credit (NC), or Withdrawal (W) or Incomplete (I) (unless the incomplete grade is changed to a passing grade within one year from receipt) in any of their courses will have to reimburse the V.A. for any difference in pay, retroactive to the beginning of the semester unless they can report mitigating circumstances to the V.A. Regional Office.

Veterans or eligible persons who are thus excluded from VA educational benefits must be approved for re-enrollment for educational benefits by the Adjudication Officer at the VA Regional Office in Phoenix, Arizona.

Pima College does not exclude individuals from attending the College because they are not receiving VA educational benefits.



Servicemen

Servicemen's Opportunity College (SOC)

Pima Community College is a participant in the Servicemen's Opportunity College (SOC) program sponsored by the American Association of Community and Junior Colleges and the Department of Defense.

Colleges in the SOC program have agreed to accept credits from other SOC colleges and make special arrangements to assist service personnel in completing their chosen educational programs and obtaining degrees.

Pima Community College will award the appropriate Associate Degree or Certificate to a SOC student who has completed the requirements for graduation whether the student is in attendance at the time requirements are completed or not. Complete details about the program can be obtained from the Community Campus Advisement Office or from the Davis-Monthan Air Force Base Education Office.

Advisement

Personal assistance is given each student in helping him or her select a program of study that meets individual needs and goals. The object of the advising program, offered prior to each semester and during the semester, is to increase the success of each student.

Decisions made during advisement periods are translated into class schedules for each student. Advisement is offered by counselors and faculty advisors at each of the College's campuses.

International students must contact the three staff members responsible for guiding their educational experience at Pima Community College. These are the International Student Admission Specialist, the International Student Counselor and a program advisor. Since two of these staff members are currently available only at the West Campus, full-time international students must be admitted and complete registration and schedule changes at that location. International students may be required to take placement examinations for the purpose of determining proper academic placement. An international student registering for a course must meet the prerequisites or otherwise satisfy the instructor of his or her preparation to take the course. Prerequisites can be waived only at the direction of the instructor or department involved. An instructor may withdraw a student who does not have the proper prerequisites for his or her class.

Arizona Higher Education Course Equivalency Guide

The Higher Educational Coordinating Council (HECC), in conjunction with the Arizona Board of Regents and the State Board of Directors for Community Colleges of Arizona, has developed the Arizona Higher Education Course Equivalency Guide in order to smooth the transfer of students from Arizona's community colleges to the state's senior institutions of higher education. A student or counselor can use the Guide for immediate information on the transferability of any course currently being offered by a community college in the state of Arizona. The guides are available for students' use in the offices of the College counselors.

Registration

Students can register for classes during regularly scheduled registration periods. Advisement is available to all students prior to registration.

A schedule of classes, which contains registration and advising instructions, is provided to each student and applicant prior to each semester.

Registration is not complete until all fees have been paid. Students who do not have their fees paid or deferred on the day they register run the risk of having all their courses deleted—requiring re-registration.

Students notified of a financial aid award should first report to the Financial Aid Office. New students attending the College under the G.I. Bill should consult the V.A. Certification Office about fee deferments. These offices are located on the West Campus, the Downtown Campus, and the East Education Center.

International students must contact the three staff members responsible for guiding their educational experience at Pima Community College. These are the International Student Admission Specialist, the International Student Counselor and a program advisor. Since two of these staff members are currently available only at the West Campus, full-time international students must be admitted and complete registration and schedule changes at that location. International students may be required to take placement examinations for the purpose of determining proper academic placement. An international student registering for a course must meet the prerequisites or otherwise satisfy the instructor of his or her preparation to take the course. Prerequisites can be waived only at the direction of the instructor or department involved. An instructor may withdraw a student who does not have the proper prerequisites for his or her class.

Maximum Credit Hours Per Semester

The maximum number of credit hours for which a student may enroll in any one semester is eighteen. This limitation includes residence work as well as concurrent registration with the University of Arizona and in extension, correspondence, or high school courses.

Students who wish to exceed this maximum credit hour load must obtain the approval of the director in the division of their program majors.

Fee Schedule—1979–80

Registration Fee (all students):

10 + hours	\$ 70
7 to 9 hours	\$ 55
1 to 6 hours	\$ 35

Course Audit Fee Same as registration fee

Tuition (for out-of-country or out-of-state students only who are carrying seven or more credit hours within Pima County):

County Resident	none
Out-of-County, In-State Resident (12 + hours)*	\$575
Per Credit Hour (7 to 11 hours)	48
Out-of-State Resident (12 + hours)	840
Per Credit Hour (7 to 11 hours)	70
Per Credit Hour (1 to 6 hours)	2

Santa Cruz County Residents taking courses at locations in Santa Cruz County

Per Credit Hour TBA

Special Tuition Fee:

Course repeat cost assessment,	
Per Credit Hour	\$ 26

Summer Session Tuition (1979)

Per Semester Hour	\$ 22
Registration Fee	5

Laboratory Fees

Nominal non-refundable fees may be assessed for lab courses.

Special Fees

Out-of-State Application (not refundable)	\$ 10
Official Transcript (first copy free)	1
ROTC Deposit	25
Business Machine Deposit	25
Music Lessons (private)	
(Non-Music Majors (1 hour per week)	150
(½ hour per week)	75
G.E.D. Test	10
G.E.D. Test (repeat)	2
Excessive loss or breakage	(up to actual
(due to carelessness)	replacement cost)
Lost Books	(replacement cost)
Withdrawal charge**	4
Health Science Course	
Excessive Liability	
Fee-non-refundable	4
Returned Check	
(each occurrence)	5

*Arizona students residing in counties which do not have community colleges may be eligible to have tuition paid by the county in which domiciled.

**To be assessed when student withdraws totally from the college prior to the end of the add/drop period.

Refund Policy (Credit Courses)

REGISTRATION FEE REFUND—This fee is not refundable except under the following circumstances:

1. When classes are cancelled by the college, a 100 percent refund will be made.
2. When students process a complete withdrawal from the college prior to the end of the normal drop/add period a refund, less a \$4 withdrawal fee, will be made.
3. When students adjust their schedules by officially dropping one or more classes on or before the end of the normal drop/add period and the amount of their fees is affected, a refund of the applicable fees will be made.

TUITION REFUND—Refunds to out-of-county or out-of-state students who officially withdraw or who are officially dismissed by the college will be made in accordance with the following schedule:

1. If the withdrawal or dismissal occurs *at any time* on or before the seventh (7th) calendar day after the start of the term, a 75 percent refund will be made.
2. If the withdrawal or dismissal occurs between the eighth (8th) and fourteenth (14th) day after the term starts, a 50 percent refund will be made. No refund will be made after the fourteenth (14th) day of the term.
3. If students adjust their schedules by officially dropping one or more classes on or before the end of the normal drop/add period, and the amount of the tuition is affected, a 75 percent refund of the applicable tuition will be made.

For a withdrawal or schedule adjustment to be official, it must be processed through the Registrar's Office. All requests or questions concerning refunds must be made at the Cashier's Office at the West Campus, Downtown Campus, East Education Center or the Community Campus office after appropriate action has been taken by the Registrar's Office.

Refund Policy (Non-Credit Courses)

The Community Services Office handles requests for questions concerning refunds for special interest community service/non credit courses.

No fees will be refunded after the first class meeting.

Grading Policies

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

A—Superior (4 grade points per credit hour)

B—Good (3 grade points per credit hour)

C—Average (2 grade points per credit hour)

P—Pass (C or better without grade differentiation ordinarily indicated by the College grading system.)

I—Incomplete (A record of "Incomplete" as a grade will be made at the individual's request and at the instructor's option. This grade will be kept on record for one year after which it will be automatically changed to "NC." A student receiving a grade of "I" will be provided with a standard form specifying the work necessary for completion of the course.)

NC—No credit (This grade is given students who have not completed enough course work to receive an "I" or who have performed below average work.)

W—Withdrawal (This grade may be requested by the student or by the instructor after the instructor has notified the student, personally or by mail, that this action is intended.)

X—An X placed next to a grade indicates the grade was earned through successful completion of a proficiency test.

AU—Audit (Persons officially registered may audit courses with the permission of the instructor. No credit will be earned. Requests for audit status must be made before the end of the second week of classes each semester.)

Grade points are computed on the basis of four points for each credit hour of A, three points for B, and two for C. A grade point average (GPA) is found by multiplying the number of credit hours for each course by the number of points for the grade and then by dividing the sum of the total points by the total number of credit hours of A, B, and C grades.

A complete record of all courses attempted at Pima Community College is maintained for each student. Grade reports are mailed to each student at the end of each semester.

Repeat of Course for Credit

For the purpose of state aid, State Board regulations "prohibit students from repeating courses more than once except in certain programs where they can take no more than four semesters of work in any 'course'."

Students who have previously been registered in a course on the official census date (45 calendar days after the first day of classes) may enroll one additional time in the course without payment of any special fee. Usually their re-enrollment purpose is to improve their grade or to increase their proficiency. Both grades will appear on the permanent record and transcript. Only one successful completion will be counted toward degree and certificate requirements.

Certain designated courses may be repeated for additional credit toward degree and certificate completion if so indicated at the end of the course description in the Catalog.

Students who have been enrolled in a course on the official census date the maximum number of times permitted by State Board regulations and who enroll again will be assessed an additional fee called the "course repeat cost assessment." This fee, as approved by the Governing Board of Pima County Community College District, will be to replace the lost state-aid assistance for the applicable credit hours.

Attendance

Attendance in class is part of the commitment to the learning process established between a student and an instructor. Thus, students are expected to regularly and *punctually* attend all classes for which they are enrolled. *All attendance requirements shall be given to the student in writing at the beginning of a course.* Non-attendance may result in the student being withdrawn from the course by the instructor.

Students participating in official college activities are considered to have been engaged in co-curricular educational activities. However, students are responsible for notifying their instructors in advance of an absence for official college activities and for completing all class assignments as required.

Withdrawals

Students may withdraw from a course at any time before the end of the term. However, students who feel they must withdraw from a course should first consult with their instructor or a counselor.

If after such consultation withdrawal still is considered necessary, the student should notify each instructor who would be involved in the decision and the Registrar's Office of his intention. Accurate information on the date and reasons for each withdrawal must be kept by the College.

A withdrawal grade may be requested by the student or the instructor after the instructor notifies the student personally or by mail that this action is intended.

Credit by Examination

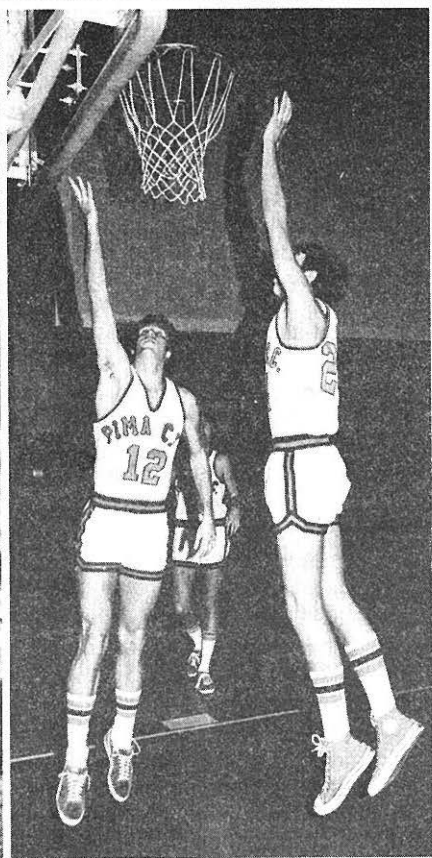
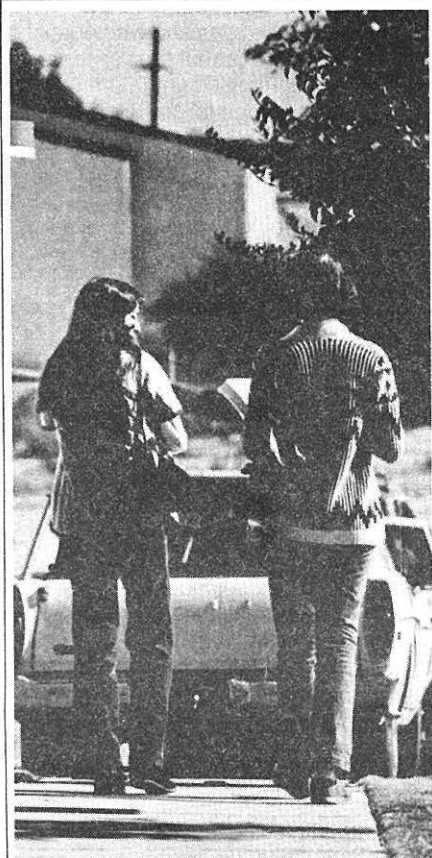
Credit by examination includes:

1. Advanced placement from high school
2. College Level Examination Program (CLEP)
3. Defense Activity for Non-Traditional Educational Support (DANTES), formerly United States Armed Forces Institute (USAFI)
4. Special examinations for credit or grade

Students currently or previously enrolled at Pima Community College may earn up to a maximum of 30 hours credit by examination.

Students cannot receive credit by examination for a course that is equivalent to or lower than that in which they are currently enrolled or for which they already have received credit.

Credit by examination is offered on the principle that the student has already acquired knowledge of the competencies of the course and an instructor, therefore, is not responsible for helping the student develop them.



ADVANCED PLACEMENT FROM HIGH SCHOOL—These exams are administered in various high schools each year during the month of May and are designed to test competence in specific subject areas at the lower division college level. High school seniors may request the opportunity, through their counselor's office, to pursue college credit by examination in one or more areas of proficiency. A fee is charged for each exam. Pima Community College credit will be awarded in appropriate subject areas to students who receive a score of 3, 4 or 5 on these exams.

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: A maximum of six (6) credit hours may be obtained for each general exam in which a standard score of 500 or better is achieved. Five general exams are offered—English composition, humanities, mathematics, natural sciences and social sciences (history). 2) Subject Examinations: These are more specific and intended to cover material typical of college level courses in each student area. More than 40 of these exams are available, and credit may be earned for one or more Pima Community College courses upon completing an appropriate subject examination with a standard score of 50 or better.

DEFENSE ACTIVITY FOR NON-TRADITIONAL EDUCATIONAL SUPPORT (DANTES)—Students who successfully completed DANTES subject standardized tests while on active military duty may be eligible to receive credit by examination for appropriate Pima Community College courses. An official transcript of test results can be obtained by writing to DANTES, Box 2819, Princeton, N.J. 08540.

SPECIAL EXAMINATIONS FOR CREDIT OR GRADE—Students have an opportunity in some courses, to earn credit by successfully completing an examination at the beginning of the semester. This procedure is currently under review by the College.

Transfer of Credits

Appropriate credit will be accepted for transfer from other institutions if it is applicable toward the student's degree objective at Pima Community College. Courses in which a grade of less than "C" was earned will not be accepted except under unusual circumstances. Students who wish to transfer credit to Pima must forward an official transcript of work completed to the Registrar's Office for evaluation.

Students planning to continue their studies at a four-year college or university should follow the first two-year requirements of the institution to which they wish to transfer to help insure an acceptability of credits earned at Pima.

Degrees and Certificates

Pima Community College establishes certain requirements which must be met before a degree, certificate or course credit is granted. These requirements involve curriculum and course specifications.

Faculty and staff are available to help students understand and arrange to meet these requirements, but students are responsible for fulfilling them. If the requirements have not been satisfied at the end of the student's course of study, the degree, certificate or course credit will not be granted. For this reason, it is important that each student throughout his or her college career be knowledgeable of all regulations, keep currently informed, and be responsible for completing these requirements.

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.

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

Students may choose to fulfill degree or certificate requirements as outlined in any one catalog which was in effect during their dates of attendance at Pima Community College with the following exception: students who withdraw from Pima for two or more consecutive semesters must meet degree requirements as outlined in the Catalog at their date of re-enrollment or any subsequent catalog during their dates of attendance.

DEGREES—Pima Community College offers both Associate of Arts and Associate of Science degrees in a variety of subject areas. Certain occupational programs, in addition, offer students a choice of an Associate of Science or Associate of Applied Science degree. The degree is specified in the program curriculum.

These 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 Arizona Community College Board. Details of programs offered are listed in a separate section of this catalog.

While a minimum of 60 credit hours 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 12 semester hours of the total required to qualify for an Associate degree must be earned at Pima Community College.

CERTIFICATES—Various types of certificates are awarded in many short-term study program areas. These are programs not carrying the two-year (60-credit hour) minimum for the Associate degrees. Certificates are granted upon the completion of a prescribed program of study as described in the respective program curriculums of this catalog.

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

Evening/Extended Day Programs

Many Pima Community College courses are offered in the evenings or on weekends. These courses cover many fields of interest, and are offered at many Tucson locations.

Course offerings include classes that are part of degree-oriented programs, and classes that provide occupational training, as well as special-interest classes. Evening program students may choose to work toward an associate degree or earn a certificate of completion of some established short-term programs. Students may also simply attend classes in an area of personal interest.

For more information, please contact the Evening Programs Offices at:

West Campus	884-6781
Downtown Campus	884-6954
East Education Center	884-6580
Community Campus	884-6940

Summer Session

A three-session program is offered during summers which consists of two five-week day terms, and one eight-week term.

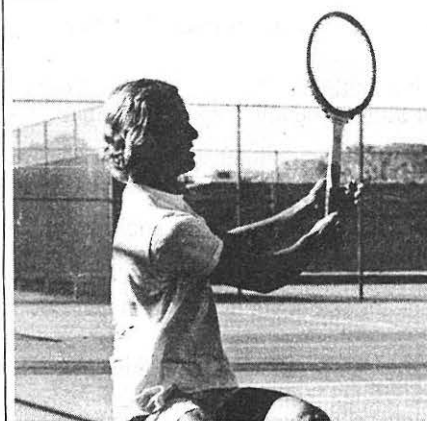
Costs for tuition and fees are \$20 per credit hour and \$5.00 for registration. Under Arizona law, summer programs must be self-supporting and receive no public support.

Alternative Learning Centers

Learning Centers have been established on both the West Campus and the Downtown Campus to provide alternative learning experiences in a variety of subject areas. In these centers, students are encouraged to work independently and to progress at their own pace. Instructors and tutors are available during both the day and evening hours to work with any student.

The major services provided are: (1) Self-paced, individualized programs in the basic skills of reading, writing, and mathematics, (2) Supplemental tutorial assistance for students enrolled in regular classes in a variety of subject areas, (3) Testing to assist students in placement, self-assessment, and career goal setting, (4) Counseling and personal development services.

All Pima Community College students should visit one of the centers to obtain additional information about the specific educational services which many have used to great advantage.



Learning Resource Center (Library)

The main library, located on the third floor of the Library/Administration Building on the West Campus, is open to all Pima Community College students, faculty and staff members, and residents of Pima and Santa Cruz Counties.

The total collection of intershelved books and audio visual materials numbers almost 300,000 items. This total includes books, pamphlets, audio and video cassette tapes, records, maps, slides, art prints, games, filmstrips, films, magazines, newspapers, and microforms. The collection is particularly strong in the areas of art, ethnic studies, music, literature, law enforcement, business and legal reference, and Latin American history.

In addition to materials in the general stacks, the LRC features six separate collections of materials: Spanish-Language, Professional Development, Children's Literature, Paperback Leisure Reading, Film and Video, and Current Best-Sellers. It subscribes to over 1,400 magazines and newspapers. Also available for users are microfiche collections of college catalogs, national phone directories and ERIC documents.

The LRC contains study tables, equipped carrels and lounge areas to accommodate over 300 students. In addition, classes can view films or videotapes in the film room. The LRC frequently houses traveling art exhibits or displays work done by faculty or students.

The public services staff is available to answer reference questions and assist users in locating and utilizing items in the collection. The staff also provides free bibliographies, tours, referral to other community resources, access to automated data bases, student and faculty manuals, a self-paced library skills workbook, and the use of typewriters and calculators.

The Downtown Campus library, located on the second floor of the Campus Center, houses a collection of print and non-print materials for reference and for curriculum support. A collection of current magazines and newspapers is maintained for informational and leisure reading. A small collection of backfiles of selected periodicals is also available for faculty and student research. The library also maintains a small collection of popular fiction and non-fiction for leisure reading. Research assistance, guidance, and referral to other community library resources is available from the library's professional staff. Students registered at the Downtown Campus also are eligible and encouraged to use the West Campus library, whether independently or through the reference services offered by the Downtown Campus Library staff.

The East Education Center library has a non-circulating collection of print and non-print materials for reference and in support of the curriculum. A collection of magazines and newspapers also is maintained. Research assistance, guidance and referral to other library resources is available from the library's staff. Students registered at the East Education Center may also use the resources of the Downtown Campus and West Campus libraries either independently or through the reference services offered by the East Education Center library staff.

Community Campus students taking courses at locations throughout the college district are urged to use library sources at either the West or Downtown Campuses or the East Education Center.

Información—General

Pima Community College es una institución dedicada a la educación superior. Se reconoce la necesidad que hay en toda comunidad de que exista una institución donde todos los miembros tengan la posibilidad de educarse, de buscar nuevas metas personales, y que todo individuo pueda contribuir al desarrollo cultural de la comunidad. Esto significa que Pima Community College reconoce, y trata de fomentar el conocimiento común de esos hechos culturales e históricos de los múltiples grupos étnicos de nuestro Suroeste. La multicultid cultural que presenta nuestra comunidad se presta a la creación de un proceso educativo rico en sus raíces, diverso en materia, y amplio en sus métodos.

Los programas educativos que se imparten en Pima Community College en general no tendrán una duración mayor de 2 años. El currículo incluye cursos en las diversas materias que se imparten tanto en español como en inglés, presentando materias en ambos idiomas. Pima Community College proporciona a la comunidad de habla hispana la posibilidad de aprovechar más el proceso educativo sin perder el tiempo mientras se aprende inglés, o simplemente, significa que una persona que desea practicar ambos idiomas tiene la posibilidad de hacerlo.

La legislación del Estado de Arizona define el “community college” diciendo que serán instituciones educativas donde se proporcionarán programas en las artes, ciencias y humanidades, y se incluirán cursos vocacionales y técnicos. Al llevar a cabo esta definición, Pima Community College se compromete a prestar los siguientes servicios a la comunidad:

Educación de tipo general que fomente interés en el conocimiento así como interés en la capacidad del hombre para formar una parte inteligente y responsable de su comunidad.

Programas educativos de duración variable que prepare a los estudiantes en carreras útiles y satisfactorias. Dos años de estudios preparatorios que permitan al estudiante ingresar en cursos universitarios superiores. Cursos educativos de toda índole que tienen como fin satisfacer las aspiraciones vocacionales o académicas de la población.

Un personal profesional que trata de servir a la comunidad en forma académica y vocacional. Servicios en cuanto a las necesidades culturales, recreativas, y de interés general. No es necesario el certificado de secundaria para ingresar en Pima Community College. Si usted desea más informes, comuníquese con la Oficina de Admisión.



Student life

Student Services

The Student Services staff is responsible for furnishing students with what they need and request in order to educate themselves—in addition to what is provided by the instructional areas of the College. Student Services, therefore, involves itself in the education of the whole person: individual growth, counseling, group experiences, social life, cultural awareness and appreciation, physical, emotional and financial well-being, experiences in governing society, and earning a living.

Centers are located at the West Campus, Downtown Campus, East Education Center and Community Campus office, and at some off-campus sites used by evening students.

Student Development

Students attending either day or evening sessions can receive an orientation to the College, academic advising, career planning, and testing and counseling services from members of the student development staff. These services are available at the West Campus, Downtown Campus, East Education Center, the Community Campus office and at various off-campus locations used by evening students.

Counseling

Counseling services cover academic, personal and/or career problems. Although students are accepted on a walk-in basis, appointments are recommended.

Assessment Services

Individual assessments can be made, with the assistance of materials, for counseling, career and/or educational planning. Materials used by the staff help determine individual capabilities, specific learning disabilities, vocational interests, aptitudes, achievement and/or personal crisis situations. Group times also are made available for the General Education Development test (for high school equivalency) and the Test of English as a Foreign Language required of foreign students seeking admission to the College. Many tests are available in both English and Spanish.

Career Centers

Students are acquainted with job knowledge skills, personal traits needed to successfully complete specific programs of study leading to careers and vocations, and also life management skills. Career and life management materials are available for individual and/or small group use. The center, in addition, provides a means for following up vocational interests which may have been assessed through testing or personal development courses.

Career Centers located in the Student Center on the West Campus, and at the Downtown Campus include descriptions of tasks people are expected to perform when working in a particular career, the training needed for the career, salaries and future outlook for employment and special job requirements. This information is available in film strips, slides, tapes, computerized and written materials.

In addition, the centers offer special materials and counseling to assist undecided persons in making career choices. Some of the special services used to help persons select a career include vocational tests, career classes, computerized vocational search, and individual and small group counseling.

Academic Advising

After deciding on an academic, vocational or personal goal, the student is introduced to a faculty advisor familiar with the requirements of a particular program of study.

Personal Development Program

Students seeking alternative approaches to personal growth can take part in a variety of group experiences and individual conferences. Classes are scheduled by modules each semester to focus on such areas as college survival skills, self-assessment, human relations and problem solving, career exploration and development, self-awareness, and specific needs for women and men to improve interpersonal skills. Units are offered at the time of class registration.

Special Programs

Special programs are provided to assist Indian students, ex-offenders (PRISM), foreign students, veterans, and those who are physically impaired or have limited mobility. These programs include assisting the qualified student in obtaining financial benefits, counseling, and tutoring.

An example of such a program is the Paso Adelante Program. The goal of the Paso Adelante Program at Pima Community College is the exposure of newly recruited minority students to the wide range of career opportunities available to them. Paso Adelante recognizes that efforts which merely encourage students to enroll in a course of study but lack supportive follow-up services do not foster student success. Therefore, the program encourages a "Step Forward" by providing special support services to participants.

Student Health Services

Limited assistance in health matters is available to students at each campus. Workshops and other means of health education are available to assist students in recognizing and understanding health needs. In addition, West Campus student health services has a registered nurse.

It is hoped that students will avail themselves of these services as they recognize their own health needs or would like to have some health counseling.

Accident insurance is provided for Pima Community College students enrolled for credit courses without additional cost under a blanket policy. 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 are available in each student service area.

Publications

Student publications include two newspapers, the "Aztec Campus News" and the "Downtowner," and two literary magazines, "Mazagine" and "Llueve Tlaloc."

Those who would like to serve on the staff of the newspapers in any capacity should contact either the Fine, Applied and Communicative Arts area office or the Student Activities Office on the West Campus, or Educational Support Services at the Downtown Campus.

West Campus students enrolled in Journalism 57 produce the West Campus student newspaper, the "Aztec Campus News." Additional journalism courses are offered for students desiring more advanced work.

Journalism 160 through 169—a sequence of 10 one-credit hour courses—allow students an opportunity to produce campus publications including the "Downtowner," the Downtown Campus student newspaper, as well as learn journalistic skills according to their individual interests. These one hour credit courses offer students practice in reporting, feature writing, writing headlines and captions, editing, photography, layout, art work, proofreading and advertising.

Students interested in publishing "Mazagine" (a literary/arts publication) should register for Writing 062. "Mazagine" is nationally distributed and acclaimed and contributions are welcomed from anyone. Submit to "Mazagine" in CBN 127, West Campus, SASE, if you wish work returned.

"Llueve Tlaloc," a bilingual literary magazine, is published annually by students enrolled in Literatura Creativa (Spanish 206). Selections are written in Spanish and some are translated into English for publication. Those who would like additional information regarding "Llueve Tlaloc" should contact the Bilingual and International Studies Office.

Housing

Pima Community College does not own or operate student housing either on campus or in the community. Student Services provides information to students on request regarding community agencies and organizations providing housing.

Student Activities

Information on the student governance, student clubs, organizations, athletics and cultural events scheduled during the academic year can be obtained at any of the College campuses.

Cultural events include visiting artists, films, visiting speakers, lectures, informal discussion groups or colloquiums, poetry readings, art exhibits, cultural awareness weeks, and festivals.

Student activity offices also provide information on community events, housing and transportation. Information service personnel will help students reserve a meeting room for college activities or post a notice. A student handbook is made available through these offices.

For information on these services, consult the Student Services Office on any campus.



Student Leadership

Students have a voice in college functions through many areas. These include recognized student governance associations at each of the campuses, the Board of Governors, and appropriate student groups and committees at each of the campuses. Representatives of the student body also sit on various task forces and committees that make recommendations to the President.

Although the student representatives on the Governing Board 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. Those interested in participating should check with Student Activities for available positions. Students, in addition to serving on the college groups, provide information on activities of the various groups to the student body government. For information on these activities, consult the Student Activities Office on any campus.

Leadership courses are also offered through Career Development courses (CDE) to improve leadership skills and to gain an understanding of the working relationship of student government within the community college structure.

Standard of Conduct and Student Code of Conduct

All students at Pima Community College are considered responsible adults and, as such, are accountable for their own personal behavior. All students are expected to conform to local, state, and federal laws and duly established college standards of conduct. For a detailed statement of college regulations refer to the Student Code of Conduct available in the office of the Campus Student Services administrator.

Intercollegiate Athletics and Intramural Sports

Pima Community College offers well-rounded athletic, intramural and campus recreation programs plus physical education classes to meet a variety of student interests. Complete details on intercollegiate, intramural and campus recreation programs can be obtained from the Athletics Office in the Fieldhouse (P.E. Annex). Physical education programs are handled by the Physical Education Department or the Human Resources Division of the West Campus.

INTERCOLLEGIATE: Pima is a member of the Arizona Community College Athletic Association, and the National Junior College Athletic Association, Region #1. Intercollegiate activities are governed by a board of students, staff and faculty with policies administered under the President by the Director of Athletics. Eligibility requirements are set by the sports organizations which govern our participation. The basic stipulations are that the student/athlete be enrolled full-time, making satisfactory academic progress, and that he or she has been granted a medical clearance for participation. Competition includes cross country (men & women), basketball (men & women), tennis (men & women), track (men & women), baseball (men), volleyball (women), wrestling (men), golf (men), and softball (women).

INTRAMURAL: Intramural activities are open to any member of the College—students, faculty and staff—with sports geared to individual and team competition. More than 35 activities are available and others are developed when enough interest is shown. Activities include basketball, baseball, badminton, flag football, golf, ice cream eating contests, billiards, ping pong, seven-mile bicycle race, bucking horse contests, softball, swimming, tennis, volleyball, racquet ball, weight lifting contests, and several two-mile cross country runs.

Financial Aid

A complete program of financial assistance is offered to students through scholarships, loans, grants and jobs. The principle objective of the Pima Community College financial aid program is to remove any financial barriers to college attendance by sincerely motivated students without regard to age, ethnic heritage or personal circumstances. Financial assistance is offered at the various student service offices.

Types of Financial Aid

SCHOLARSHIPS: *A limited number of scholarships have been established for students by generous private donors. Awards range from \$60 to \$300 and often can be renewed for a second year.*

The available scholarships are:

- Grace K. Abodeely Scholarship Fund

Source: Grace K. Abodeely

Eligibility: Deserving student on rifle team, in trap shooting

Value: \$120, one award per year

- American Association of University Women Scholarship

Source: American Association of University Women (Tucson Branch)

Eligibility: Promising and needy students

Value: \$150, number varies

- American Business Women's Association

Source: American Business Women's Association of Tucson

Eligibility: Female students interested in the business field

Value: \$120, one award per year

- Arizona Association of Mexican-American Educators Scholarship

Source: Southern Arizona Association of Mexican-American Educators, Inc.

Eligibility: Promising and needy students

Value: \$120, one award per year

- Arizona Society of Professional Engineers Scholarship

Source: Arizona Society of Professional Engineers, Southern Chapter

Eligibility: Promising and needy students in Engineering

Value: \$120, two awards per year

- Elise Beaman Memorial Scholarship Fund

Source: Friends

Eligibility: Promising and needy students

Value: Amount varies and number of awards vary

- Continental Airlines Foundation Scholarship

Source: Continental Airlines Foundation

Eligibility: Promising students in any field

Value: \$120, one award per year

- Data Processing Management Association (Southern Arizona Chapter)

Source: Data Processing Management Association

Eligibility: Full-time enrollment in the computer science program

Value: \$60, two awards per year

- Riginette Enz Scholarship
Source: Mrs. Riginette Enz
Eligibility: Students enrolled in the Dental Assisting Program
Value: \$60, one award per year
- Margaret Ernst Memorial Scholarship
Source: Family and friends
Eligibility: Promising and needy students
Value: Amount varies, number varies
- Exchange Clubs of Tucson Temporary Loan Fund
Source: Exchange Clubs of Tucson
Eligibility: Second semester students
Value: Up to \$50 for books, number varies
- First National Bank Scholarship
Source: First National Bank of Arizona
Eligibility: Students in the business field
Value: \$150, three awards per year
- Frederick B. Ginsburg Memorial Scholarship
Source: Family and friends
Eligibility: Deserving students in any field of study
Value: \$300 per year, one award each year
- Hughes Aircraft Company Scholarship
Source: Hughes Aircraft Company
Eligibility: Promising and needy students pursuing a four-year degree program
Value: \$500, two awards \$500 each
- International Foodservice Manufacturers Association (IFMA) Educational Foundation (Golden Plate)
Source: National Institute for the Foodservice Industry
Eligibility: Full-time student in Foodservice Management
Value: \$600, number varies
- Kappa Delta Phi Sorority Scholarship
Source: Nu Delta Chapter
Eligibility: Promising student in any field of study
Value: \$120, number of awards varies
- Kino Community Hospital Auxiliary Scholarship Fund
Source: Kino Community Hospital Auxiliary, Inc.
Eligibility: Promising and needy students in Health Sciences
Value: \$120, two awards per year
- Kiwanis Club of Green Valley Scholarship
Source: Kiwanis Club of Green Valley
Eligibility: Promising and needy students
Value: \$250, one award per year
- Kiwanis Club of Tucson Scholarship
Source: Kiwanis Club of Tucson
Eligibility: Promising and needy students
Value: \$250, one award per year
- Sharon Krieg Memorial Scholarship Fund
Source: Family and friends
Eligibility: Promising and needy students
Value: Amount varies, number varies

- **League of Mexican-American Women Scholarship**
Source: League of Mexican-American Women
Eligibility: Promising Mexican-American students
Value: Amount varies, number varies
- **Marshall Foundation Fund—Allied Health**
Source: Marshall Foundation
Eligibility: Students enrolled in an Allied Health program
Value: Amount varies, number of awards varies
- **Marshall Foundation Fund—Nursing**
Source: Marshall Foundation
Eligibility: Female students enrolled in the RN program
Value: Amount varies, number of awards varies
- **Andrew P. Martin Scholarship Fund**
Source: Estate of the late Andrew P. Martin
Eligibility: Graduate of a Tucson high school, enrolled in a one- or two-year building, electronics or mechanical trade course of study
Value: \$300, number of awards varies, renewable
- **M.E.C.H.A.—Lizzie Lopez Memorial Temporary Loan Fund**
Source: M.E.C.H.A. Club
Eligibility: Promising and needy students
Value: Amount varies, number varies
- **Medical Secretary Society of Pima County**
Source: Medical Secretaries Society of Pima County
Eligibility: Full-time enrollment in the medical secretary program
Value: \$150, one award per year
- **J. G. (Jack) Moore Memorial Scholarship**
Source: Mrs. Margery Moore
Eligibility: Promising students interested in becoming teachers
Value: \$250, two awards per year
- **National Academy of Opticianry**
Source: The Educational Foundation in Ophthalmic Optics
Eligibility: Second year student in ophthalmic dispensing
Value: Expense paid trip to annual meeting
- **Parks and Recreation Scholarship**
Source: Arizona Parks & Recreation, District #4
Eligibility: Full-time enrollment in Parks/Recreation
Value: \$150, one award per year
- **Pima Community College Booster Club Scholarship Fund**
Source: Donations from Booster Club
Eligibility: Outstanding students in athletics and other fields
Value: \$120, number of awards varies
- **Pima Community College Faculty/Staff Scholarship Fund**
Source: Donations from faculty and staff
Eligibility: Deserving students in any field
Value: \$120, number of awards varies
- **Pima Community College General Scholarship Fund**
Source: General donations to the fund
Eligibility: Promising students in any field
Value: Amount varies, number of awards varies



- **Pima Study Grant**
Source: Various
Eligibility: Promising and needy students
Value: \$120, number varies
- **Andrew J. Pizzini Memorial Fund**
Source: The estate
Eligibility: Promising and needy students
Value: Amounts vary, number and type vary
- **Recognition Award**
Source: Pima Community College Student Association
Eligibility: Participation in extra-curricular college activities and departmental recommendation
Value: Up to \$120, number of awards varies
- **Rodeo Club Scholarship**
Source: Various
Eligibility: Active participation in Rodeo Club
Value: Varies, number of awards varies
- **Society of Manufacturing Engineers Scholarship**
Source: Society of Manufacturing Engineers, Tucson Chapter 106
Eligibility: Second-year engineering student
Value: \$120, one award per year
- **Southern Arizona Chapter of A.C.U.L.**
Source: Southern Arizona Credit Unions
Eligibility: Credit Union members pursuing the credit union degree program
Value: \$120 per year, two awards per year, renewable
- **Southern Arizona Dental Society Scholarship**
Source: Southern Arizona Dental Society
Eligibility: Students enrolled in dental assisting program
Value: \$120, one award per year
- **Southern Arizona Osteopathic Medical Assistants Scholarship**
Source: Southern Arizona Osteopathic Medical Assistants Association
Eligibility: Enrolled in Medical/Allied Health
Value: \$100, one award per year
- **Southern Arizona-Tucson Innkeeper Ranch and Resort Association Scholarship**
Source: The Association
Eligibility: Promising second year students in the hospitality/tourism program
Value: \$120, two awards per year
- **Suburban Women's Club Scholarship**
Source: Suburban Women's Club of Tucson
Eligibility: Promising and needy students
Value: \$120, six awards per year
- **Tucson Advertising Club Scholarship**
Source: Tucson Advertising Club
Eligibility: Advertising majors
Value: \$60, ten awards per year
- **Tucson Airport Authority Scholarships**
Source: Tucson Airport Authority
Eligibility: Employees of Tucson Airport Authority and their families
Value: \$120, two awards per year

- Tucson Broadcasters Scholarship

Source: Tucson Broadcaster

Eligibility: Full-time student in the broadcast, journalism and/or electronics program

Value: \$250, two awards per year

- Tucson Dental Assisting Scholarship

Source: Tucson Dental Assisting Association

Eligibility: Promising students in dental assisting program

Value: \$60, one award per year

- Tucson Gas and Electric Scholarship

Source: Tucson Gas and Electric Company

Eligibility: Children of Tucson Gas and Electric Company employees

Value: \$220, two awards per year, renewable

- Tucson Medical Center Scholarship

Source: Tucson Medical Center Auxiliary

Eligibility: Employees enrolled in Health Fields

Value: \$300, number varies

- Maria Urquides Scholarship

Source: League of Mexican-American Women

Eligibility: Promising and needy students

Value: \$250, two awards per year

- Kara Watchman Memorial Scholarship

Source: Family and friends

Eligibility: Needy and deserving second year students in RN program

Value: Amount varies, one book award per year

STUDENT LOANS: The College offers a large number of student loans at low interest rates and deferred repayment at favorable terms. Among these are Student Nursing Loans, Law Enforcement Student Loans, Federally Insured Student Loans and National Direct Student Loans. A Pima Community College Emergency Loan Fund provides small loans for short periods of time to assist students in meeting emergencies.

GRANTS: A number of Supplemental Education Opportunity Grants are offered students having exceptional financial need. A Law Enforcement Education Grant program is available to students employed by law enforcement or correctional agencies. There also is a Nursing Scholarship (Grant) Program available for students enrolled in nursing. Arizona State Student Incentive Grants (SSIG) must be matched by existing scholarship awards to individual students.

COLLEGE WORK-STUDY PROGRAM: A number of campus jobs, supported jointly by college and federal funds under the College Work-Study Program are available to students. Students, generally, may work up to 15 hours per week when classes are in session. A financial aid application should be submitted at least six weeks prior to the beginning of a term.

ELIGIBILITY: Each of the programs has somewhat different eligibility requirements. In general, financial need is the most important selection factor. The lack of previous academic achievement should not discourage an otherwise deserving financial aid applicant.

BASIC EDUCATIONAL OPPORTUNITY GRANTS are available to eligible students enrolled at least half-time in a program which leads to a certificate or a degree. Students who previously earned a bachelor's degree are ineligible. Applications can be obtained from any of the College's Financial Aid Offices or from high school counselors.

APPLICATIONS: Pima Community College, in cooperation with other colleges and universities in Arizona, uses the American College Testing Service Family Financial Statement form. The Institutional Data Sheet must be submitted to the College's Financial Aid Office whereas the Family Financial Statement must be submitted to the American College Testing Service. Forms are available in the Financial Aid Office or the office of any Pima County high school counselor.

Because funds under all programs are limited in the amount available each year, applications received by March 1—prior to the beginning of the school year—will be given priority consideration. Applicants are encouraged to apply as early as possible to insure full consideration. The financial aid staff welcomes inquiries, and members may be called upon to meet with groups of students and their families in high schools and neighborhood centers to provide information and counsel about financing college expenses. Inquiries should be directed to the Financial Aid Office.

Pima Community College Foundation

A community college and the community it serves are synonymous. As partners in service, interested citizens of the community have established a Foundation to assist the college in the continual expansion of higher educational opportunities and services to the community at large and to provide a means for active citizen participation in the future growth and development of their community college.

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

A prime objective of the Foundation is to help bring about a recognition by local and regional business and industry and securing adequate financial support of Pima Community College.

The Pima Community College Foundation is an incorporated non-profit organization established in 1977 to support exclusively the educational activities of Pima Community College. The Foundation is governed by a board of directors. Membership in the Foundation is dependent upon a donation to the Foundation.

Meetings and special functions are held each year where members have an opportunity to meet and hear from students and faculty about the programs taking place at the college.

Gifts to the Foundation are tax deductible and go toward student scholarships, faculty creative teaching grants and special needs of the College as determined by the Foundation Board of Directors.

The Foundation will assist prospective donors in making bequest, planning trust and will arrangements for the Foundation.

Officers

William J. Biehl, President
William Hawes Smith, Vice-President
Joseph B. Wilcox, Secretary
Jack D. Davis, Treasurer
Stewart V. Lancaster, Executive Director

Directors of PCC Foundation

William J. Biehl
Keith S. Brown
Jack D. Davis
Walter H. Fathauer
Mary Foster
Thomas B. Freeman
Edward S. Frohling
Oscar Gonzales
Abby Grunewald
John Mascarella

Howard W. Miller, Sr.
Ernesto Portillo
Sally Rollings
Edward J. Rusing
Donald G. Shropshire
Rubin Salter, Jr.
William Hawes Smith
Joseph B. Wilcox
William Wilde

Cooperative Education

Students may earn up to three credit hours per semester while working in jobs related to their area of study. Cooperative Education may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester. The Cooperative Education program attempts to provide work experience related to the student's career goals. Part-time students who want to upgrade themselves in their present jobs also are encouraged to enroll.

Those enrolled in the program attend periodic meetings to receive instruction on job interview techniques, developing a personal resume, writing job objectives and career goals, and obtaining job opening information.

Each student is assigned a Cooperative Education coordinator who works with that student individually and offers assistance in job placement, job upgrading, skill development, skill application and career development.

Employers hiring students through the Cooperative Education program are requested to evaluate the student/employee's performance each semester.

Students holding full-time jobs find the Cooperative Education plan helpful in several ways. Most employers encourage employees to continue their education and some also provide plans which pay tuition and other costs for the successful completion of courses related to particular occupations.

Often, these employers become aware that their employees are trying to upgrade their knowledge and are willing to plan a work experience program. This could lead to faster promotions and higher pay.

The employer, in addition, has the advantage of using college capabilities for training employees on new equipment or for newly created jobs. The college, meantime, assesses the employer's training needs while providing a practical education for those employees.

- ↑ Physical Education Annex
← Gymnasium
Business
Student Center
→ Math & Electronics
Music
Alternative Learning Center
Classroom Buildings
Arts
Sciences



Programs

Programs by Campus*

PROGRAMS	WEST CAMPUS	DOWNTOWN CAMPUS
Accounting	X	X
Administration of Justice	X	
Advertising Art		X
Air Conditioning		X
Allied Health	X	X
Anthropology-Archaeology		
Anthropology	X	X
Archaeological Fieldwork	X	
Applied Art	X	
Applied Design	X	
Automotive Technology	X	X
Aviation Mechanics		X
Bilingual	X	X
Business Administration Transfer	X	X
Chemistry	X	X
Computer Science	X	X
Dental Assisting Technology	X	
Dental Laboratory Technology	X	
Drafting Technology	X	X
Drama	X	
Early Childhood Education	X	X
Education	X	X
Electronics Technology	X	
Emergency Medical Technology	X	
Engineering	X	
Exploratory	X	X
Finance		X
Fine Arts	X	
Fire Science	X	
Geology	X	
Graphic Technology		X
Home Economics	X	
Hospitality		X
Journalism	X	X
Liberal Arts and Sciences	X	X
Library Technology	X	
Life Sciences		
Biology	X	
Pre-Agriculture	X	
Pre-Dental	X	
Pre-Medical	X	
Pre-Medical Technology and Microbiology	X	
Pre-Pharmacy	X	
Pre-Veterinary	X	
Machine Tool Technology		X
Management	X	X
Marketing	X	
Mathematics	X	X
Media Technology	X	
Military Science	X	X
Music	X	
Nursing Assistant		X
Nursing-Associate Degree	X	
Nursing-Practical Nurse		X
Nursing-Transfer	X	
Office Education	X	X
Ophthalmic Dispensing Technology	X	
Optical Laboratory Technology	X	
Physical Education	X	
Physics	X	
Pre-Law	X	

Public Administration	X	
Radiologic (X-ray) Technology	X	
Real Estate		X
Recreation	X	
Respiratory Therapy	X	
Sheet Metal		X
Skills for Allied Health Services		X
Social Services	X	
Speech	X	X
Trade and Industrial Technology (Apprentice)		X
Wastewater Technology		X
Welding		X

*The East Education Center offers introductory courses in a wide range of subject areas, advanced general education courses, and selected courses in occupational programs. The Community Campus offers courses in selected subject areas in response to community interest at various locations throughout the college district.

Certificate and Degree Programs

A career ladder is offered in many programs leading from a basic certificate to an advanced or technical certificate to a degree.

Basic Certificate

Advertising Art
Air Conditioning
Airframe and Powerplant Mechanics
Allied Health Services
Alteration Specialist
Archaeological Fieldwork
Automotive Engine Repair and Rebuilding
Automotive Power Transmission
Automotive Suspension and Brakes
Automotive Tune-Up and Air Conditioning
Commercial Art
Commercial Photography
Credit Union
Data Entry Operator
Drafting, Architectural
Electronics, Consumer
Electronics, General
Emergency Medical Technology
Fast Food Industry
Food and Beverage Service
Functional Design
Graphic Technology
Hotel-Motel Operations
Housekeeping-Executive
Interior Design
Machine Shop Fundamentals
Management
Marketing
Media Technology
Nursing Assistant
Real Estate, Sales/Brokerage
Real Estate, Escrow
Savings and Loan
Secretary, Bilingual
Sheet Metal Fabrication
Social Services
Teacher Aide/Assistant (In-Service Program)
Teacher Aide/Assistant (Pre-Service Program)
Television Repair

Trade and Industrial Technology (Apprentice Major Area)
Travel Agent
Wastewater Technology
Welding

Advanced Certificate

Accounting
Clerk-Typist
Commercial Art
Commercial Photography
Credit Union
Dental Assisting
Housekeeping-Executive
Interior/Functional Design
Library Technology
Management
Marketing
Practical Nurse
Real Estate, Sales/Brokerage
Real Estate, Escrow
Receptionist
Savings and Loan
Secretary, Bilingual
Social Services (Drug Counseling Subspeciality)
Systems Programmer
Travel-Tour Agency Manager
Wastewater Technology
Youth Care

Technical Certificate

Air Conditioning, Heating and Ventilation
Automotive Mechanics
Computer Operator
Control Technician
Data Entry Operator
Drafting, Architectural
Drafting, Mechanical/Electro-Mechanical
Electronics Technology—Communications
Electronics Technology—Consumer
Electronics Technology—Digital
Electronics Technology—Industrial
Machinist's Standard
Sheet Metal Layout and Fabrication
Welding

Associate of Arts Degree

Anthropology
Applied Arts
Child Development/Family Relations
Clothing and Textiles
Consumer Service in Food
Corrections
Criminal Justice
Drama, Applied
Drama Education
Drama Production
Drama Theory
Early Childhood Education
Fashion Design
Fine Arts
Food, Nutrition, Dietetics
Food Service Management
General or Exploratory Studies
Home Economics Education
Home Economics Extension
Home Economics, General
Home Economics and Journalism
Interior Design
Journalism
Liberal Arts
Mathematics
Merchandising and Fashion Promotion
Music
Physical Education
Pre-Law
Pre-Professional Education
Public Administration
Social Services
Social Services (Drug Counseling Subspecialty)
Speech
Teacher-Director, Early Childhood Education (Pre-Service Program)
Teacher-Director, Early Childhood Education (In-Service Program)

Associate of Applied Science Degree

Accounting
Administrative Assistant
Advertising Art
Air Conditioning and Sheet Metal Technology
Automotive Technology
Banking
Computer Programmer/Analyst
Computer Specialist, Small Business
Credit Union
Dental Laboratory Technology
Drafting, Architectural
Drafting, Electro-Mechanical
Drafting, Mechanical
Electronics Technology—Communications
Electronics Technology—Consumer
Electronics Technology—Digital
Electronics Technology—Industrial
Fire Science
Graphic Technology
Hotel-Motel Operations
Interpreter Training Program
Library Technology
Machine Tool Technology
Management
Marketing
Media Technology
Natural Resource Recreation
Real Estate, Sales/Brokerage
Recreation Leader
Savings and Loan
Seamstress, Professional
Secretary, Bilingual
Secretary, Executive
Secretary, General
Secretary, Legal
Secretary, Medical
Trade and Industrial Technology (Apprentice)
Wastewater Technology
Welding
Youth Care

Associate of Science Degree

Associate Degree Nursing
Automotive Technology
Biology
Business Administration
Chemistry
Electronics Technology—Communications
Electronics Technology—Consumer
Electronics Technology—Digital
Electronics Technology—Industrial
Engineering—Aerospace or Mech
Engineering—Agricultural
Engineering—Chemical
Engineering—Civil
Engineering—Electrical
Engineering—Geological or Mining
Engineering—Metallurgical
Geology
Liberal Art & Science
Microbiology
Nursing
Ophthalmic Dispensing Technology
Physics
Pre-Agriculture
Pre-Baccalaureate Nursing
Pre-Dental
Pre-Medical
Pre-Medical Technology
Pre-Pharmacy
Pre-Veterinary
Radiologic Technology
Respiratory Therapy

Accounting

Accounting degree program studies provide training and experience in systems, theory and central problems of business accounting. They also provide the necessary background for related, yet diverse, entry-level careers in private accounting, public accounting and government accounting. Students planning to become Certified Public Accountants should follow requirements in the Business Administration Transfer Program.

Advanced Certificate For Direct Employment

Required Courses (32)	First Semester	Cr. Hrs.
Principles of Accounting I	ACC 101	3
Payroll/Applied Accounting Systems	ACC 50	3
Mathematics of Business	BUS 51	3
Introduction to Business	BUS 100	3
Business Law I	BUS 200	3
		<hr/> 15
	Second Semester	
Principles of Accounting II	ACC 102	3
Tax Accounting	ACC 204	3
Introduction to Computers	CSC 100	3
Business Law II	BUS 201	3
Human Relations	MAN 110	3
Calculating Machines	OED 121	2
		<hr/> 17

Associate of Applied Science Degree For Direct Employment

Required Courses (60-64)	First Semester	Cr. Hrs.
Principles of Accounting I	ACC 101	3
Introduction to Business	BUS 100	3
Mathematics of Business	BUS 51	3
Human Relations	MAN 110	3
Business English	OED 154	3
		<hr/> 15
	Second Semester	
Principles of Accounting II	ACC 102	3
Introduction to Computers	CSC 100	3
Tax Accounting	ACC 204	3
General Education Elective*		3-4
Speech Elective	SPE 110 or 120	3
		<hr/> 15-16
	Third Semester	
Cost Accounting	ACC 203	3
Business Law I	BUS 200	3
Intermediate Accounting I	ACC 201	3
Introduction to Microeconomics	ECO 100	3
General Education Elective*		3-4
		<hr/> 15-16
	Fourth Semester	
Business Organization and Management	MAN 280	3
General Education Elective*		3-4
General Education Elective*		3-4
COBOL Programming	CSC 160	3
Intermediate Accounting II	ACC 202	3
		<hr/> 15-17

***General Education Requirements.**

Select four of the following courses, or other available general education courses with the consent and written approval of the subject area or department coordinator:

MTH 70 or MTH 150
REA 100 series
WRT 101 and/or WRT 154
POL 110 and/or POL 111
SPE 120
SPA 50 and/or SPA 55
PHI 101 and/or PHI 102 and/or PHI 120
PSY 100 and/or PSY 101
SOC 100 and/or SOC 101
HUM 110 and/or HUM 111
ECO 101

Administration of Justice

The Administration of Justice curriculum offers two options—criminal justice and corrections—with courses serving three types of students; in-service, pre-service and transfer. Students can acquire skills needed to up-grade their present positions, find a job, or transfer to a four-year institution.

Job entry programs offer the maximum number of skills possible. Students in these programs should concentrate on specific major courses, and the general education requirements.

Those planning to transfer should follow the requirements of the four-year institution they wish to attend, taking only the core courses in their major area. Transfer programs also are available at Pima.

Students entering an Administration of Justice program must be advised by one of the instructors in the area.

Corrections Associate of Arts Degree For Direct Employment

Required Courses (62–65)		Cr. Hrs.
Introduction Administration of Justice	AJS 101	3
Criminal Law I	AJS 172	3
Fund. Crime & Delinquency or Institutional Field Services	AJS 260	3
Criminal Justice Procedures	AJS 245	3
Juvenile Justice Procedures	AJS 216	3
	AJS 212	3
		<hr/> 15

General Education Requirements

Writing I	WRT 101	3
Technical Communications or Writing II	WRT 154	3
American National Government	WRT 102	3
American State/Local Government	POL 110	3
Introduction Psychology I–II	POL 111	3
Introduction Sociology	PSY 100–101	6
Mathematics of Business	SOC 100	3
Introduction Microeconomics	BUS 51	3
Business & Professional Communication	ECO 100	3
Electives*	SPE 120	3
		<hr/> 17–20
		47–50

*Suggested Electives

Fund. Crime & Delinquency	AJS 260	(3)
First Aid	REC 121	(2)
Introduction to Youth Care	AJS 163	(3)
Police Communications and Human Relations	AJS 210	(3)
Institutional & Field Services	AJS 245	(3)
Introduction Social Welfare	SSE 133	(3)
Casework Methods	SSE 134	(3)
Group Work	SSE 235	(3)
Evaluation/Support of Drug User	SSE 217	(3)
Defensive Tactics	AJS 12	(2)
Survival	REC 118	(2)
Treatment Drug Abuser	SSE 218	(3)
Criminal Law II	AJS 272	(3)
Organized Crime Investigation	AJS 220	(3)
Crisis Intervention—Theory/Technology	SSE 236	(3)
Interviewing Techniques	SSE 234	(3)
AJS Field Experience	AJS 290	(3)
Detention Super. Methods	AJS 240	(3)
Behavior Modification	PSY 104	(3)
Ethnic Studies Courses	ANT or HIS	(3)
Criminal Investigation & Report Prep.	AJS 204	(3)
Program Planning & Organization	REC 114	(3)
Normal Personality I	PSY 103	(3)
Nutrition	FSN 114	(3)

Note: Other course electives may be taken. For more information, students should contact an advisor.

Corrections Associate of Arts Degree For Transfer

Required Courses (68–70)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Introduction to Logic or Natural Science* (1)	PHI 120 or Natural Science elective	3–4
College Algebra* (2)	MTH 150	3
American National Government	POL 110	3
Introduction Administration of Justice	AJS 101	3
Criminal Law I	AJS 172	3
		<hr/> 18–19
	Second Semester	
Writing II	WRT 102	3
Introduction to Logic or Natural Science* (1)	PHI 120 or Natural Science elective	3–4
Finite Math	MTH 170	3
American State/Local Government	POL 111	3
Fundamental Crime & Delinquency or Institutional Field Service	AJS 260 AJS 245	3
Introduction to Public Administration	PAD 105	3
		<hr/> 18–19
	Third Semester	
Introduction to Microeconomics	ECO 100	3
Business & Professional Communication	SPE 120	3
Stat. Methods in Economics and Business	BUS 205	3
Juvenile Justice Procedures	AJS 212	3
Humanities or Foreign Language	HUM or Language	4
		<hr/> 16

	Fourth Semester	
Introduction to Macroeconomics	ECO 101	3
Introduction to Computers	CSC 100	3
Criminal Justice Procedures	AJS 216	3
Accounting for Government Agencies	ACC 173	3
Humanities or Foreign Language* (3)	HUM or Language	4
		<hr/> 16

Note: Transfer students should follow the requirements of the four-year institutions which they plan to attend. It is the student's responsibility to obtain appropriate program information from the university of his/her choice on a regular basis, and consult a faculty advisor at Pima College.

By the end of the second year, students will be expected to have completed 6 units in one of the following fields: anthropology, cultural geography, psychology, or sociology. Upon transfer to the university, students will be expected to complete 6 additional units in one other field, chosen from the previous list.

First Aid (REC 121) is strongly recommended for Corrections Majors.

*(1) Fulfilled by Logic (PHI 120) and 3–4 units of natural science or by 2 semesters of natural science. The natural science courses may be selected from the following: (Although not required, students may enroll in laboratories and use lab units as free electives, unless otherwise specified) AST 101, 102 (111 and 112 are labs); CHM 101, 102; ESC 101, 102; and LSC 103, 104. In the case of the following courses: ESC 120, 121; LSC 207, 208; and PHY 121, 122, labs are required. The 2 semesters do not need to be in the same science.

*(2) The prerequisite for MTH 150 is MTH 130, or two years of algebra. Math placement tests are available; if interested, see an advisor.

*(3) Fulfilled by either 2 semesters (8 units) of a single foreign language, or Humanities I and II (HUM 110, 111), or other selected Humanities electives. See an advisor for information concerning these electives.

Criminal Justice Associate of Arts Degree For Direct Employment

Required Courses (62–65)		Cr. Hrs.
Introduction Administration of Justice	AJS 101	3
Criminal Law I–II	AJS 172, 272	6
Criminal Justice Procedures	AJS 216	3
Police Commission/Human Relations	AJS 210	3
		<hr/> 15

General Education Requirements

Writing I	WRT 101	3
Technical Communications	WRT 154	3
American National Government	POL 110	3
American State/Local Government	POL 111	3
Introduction to Sociology	SOC 100	3
Introduction to Psychology I–II	PSY 100–101	6
Mathematics of Business	BUS 51	3
Introduction to Microeconomics	ECO 100	3
Business & Professional Communication	SPE 120	3
Electives*		<hr/> 17–20
		<hr/> 47–50

*Suggested Electives		
Patrol Procedures	AJS 71	(3)
Crime Scene Technology I	AJS 218	(3)
Crime Scene Technology II	AJS 273	(3)
Criminalistics Evidence	AJS 276	(3)
Advanced Criminalistics	AJS 277	(3)
AJS Field Experience	AJS 290	(3)
Cooperative Training	AJS 299	(3)
Police Administration	AJS 208	(3)
Traffic Safety Functions	AJS 106	(3)
Organized Crime Investigation	AJS 220	(3)
Criminal Investigation & Report Prep.	AJS 204	(3)
Detention Super. Methods	AJS 240	(3)
Services: Instruction & Field	AJS 245	(3)
Introduction to Public Administration	PAD 105	(3)
Defensive Tactics	AJS 12	(2)
Firearms	AJS 214	(2)
Juvenile Justice Procedures	AJS 212	(3)
Typing I	OED 111	(3)
Political & Legal Aspects of Drug Use	SSE 127	(3)
Drugs in American Society	SSE 115	(3)
Fund of Crime & Delinquency	AJS 260	(3)
Introduction to Youth Care	AJS 163	(3)
Introduction to Social Welfare	SSE 133	(3)
Casework Methods	SSE 134	(3)
Crisis Intervention	SSE 236	(3)
Behavior Modification	PSY 104	(3)
Ethnic Studies courses	HIS or ANT	(3)
Human Development	ECE 107	(3)

Note: Other approved electives may be taken. For more information, the student should contact an advisor.

Criminal Justice Associate of Arts Degree For Transfer

Required Courses (68-70)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Introduction to Logic or Natural Science* (1)	PHI 120 or Natural Science elective	3-4
College Algebra* (2)	MTH 150	3
American National Government	POL 110	3
Introduction to Administration of Justice	AJS 101	3
Criminal Law I	AJS 172	3
		18-19
	Second Semester	
Writing II	WRT 102	3
Introduction to Logic or Natural Science* (1)	PHI 120 or Natural Science elective	3-4
Finite Math	MTH 170	3
American State/Local Government	POL 111	3
Criminal Law II	AJS 272	3
Introduction to Public Administration	PAD 105	3
		18-19
	Third Semester	
Introduction to Microeconomics	ECO 100	3
Business & Professional Communication	SPE 120	3
Stat. Methods in Economics & Business	BUS 205	3
Criminal Justice Procedures	AJS 216	3
Humanities or Foreign Language* (3)	HUM or Language	4
		16

Introduction to Macroeconomics
 Introduction to Computers
 Police Communications/Human Relations
 Accounting for Government Agencies
 Humanities of Foreign Language* (3)

Fourth Semester

ECO 101	3
CSC 100	3
AJS 210	3
ACC 173	3
HUM or Language	4
	<hr/> 16

Note: Transfer students should follow the requirements of the four-year institutions which they plan to attend. It is the student's responsibility to obtain appropriate program information from the university of his/her choice on a regular basis, and consult a faculty advisor at Pima College.

By the end of the second year, students will be expected to have completed 6 units in one of the following fields: anthropology, cultural geography, psychology, or sociology. Upon transfer to the University, students will be expected to complete 6 additional units in one other field, chosen from the previous list.

Courses in Physical Education are strongly recommended for Criminal Justice majors.

*(1) Fulfilled by Logic (PHI 120) and 3–4 units of natural science or by 2 semesters of natural science. The natural science courses may be selected from the following: (although not required, students may enroll in laboratories and use lab units as free electives, unless otherwise specified) AST 101, 102 (111 and 112 are labs); CHM 101, 102; ESC 101, 102; and LSC 103, 104. In the case of the following courses: ESC 120, 121; LSC 207, 208; and PHY 121, 122, labs are required. The 2 semesters do not need to be in the same science.

*(2) The prerequisite for MTH 150 is MTH 130, or two years of algebra. Math placement tests are available; if interested, see an advisor.

*(3) Fulfilled by either 2 semesters (8 units) of a single foreign language, or Humanities I and II (HUM 110, 111), or other approved Humanities electives. See an advisor for information concerning these electives.

Advertising Art

Both a basic certificate and an associate of applied science degree program are available in advertising art. The first two semesters of the entire program serve as a core curriculum in the areas of advertising art, graphic technology and liberal arts. Studies in the third and fourth semesters offer specialization in advertising art as well as participation in cooperative education work experience. Both advertising art programs are designed for direct employment.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Introduction to Business	BUS 100	3
Math (based on placement exam)	MTH	3
Advertising Art I	ADA 101	3
Advertising Design I	ADA 110	3
Production Technology & Processes I–II	ADA 111, 211	6
Drawing and Composition	ADA 103	3
		<hr/> 21

Associate of Applied Science Degree For Direct Employment

Required Courses (63)	First Semester	Cr. Hrs.
Introduction to Business	BUS 100	3
Practical Communications	WRT 150	3
Graphic Technology I	GRA 101	3
Advertising Art I	ADA 101	3
Advertising Design I	ADA 110	3
Drawing and Composition	ADA 103	3
		<hr/> 18

Math (based on placement exam)
 Business & Professional Communication
 Graphic Technology II
 Production Technology & Processes I
 Advertising Design II

Second Semester

MTH	3
SPE 120	3
GRA 102	3
ADA 111	3
ADA 120	3
	<hr/>
	15

Advertising Design III
 Production Technology & Processes II
 Advertising Drawing
 Math (second course in sequence)
 Co-op Education Training

Third Semester

ADA 210	3
ADA 211	3
ADA 203	3
MTH	3
ADA 299	3
	<hr/>
	15

Human Relations in Business
 Production Technology & Processes III
 Advertising Illustration
 Advertising Design IV
 Co-op Education Training

Fourth Semester

MAN 110	3
ADA 212	3
ADA 205	3
ADA 220	3
ADA 299	3
	<hr/>
	15



Air Conditioning

Conditions similar to industry are provided through a fully equipped air conditioning laboratory. Students learn about both the heating and cooling cycles, and also how to disassemble, rebuild, repair and reassemble all types of air conditioning and refrigeration units, including domestic, residential, commercial and industrial.

A person majoring in an air conditioning curriculum may find Cooperative Education offers an ideal way of gaining additional skills-application experience while attending classes. Consult a Cooperative Education teacher-coordinator for details.

Air Conditioning Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Residential Air Conditioning:		
Air Conditioning Fundamentals	ACD 101	3
Air Conditioning Phase I-II	ACD 120, 125	8
Technical Math I-II	MTH 110, 120	6
Human Relations	MAN 110	3
		<hr/> 20
Light Commercial Endorsement:		
Above course work plus		
Air Conditioning Phase III-IV	ACD 210, 220	8
		<hr/> 28

Air Conditioning, Heating, Ventilation Technical Certificate For Direct Employment

Required Courses		Cr. Hrs.
Air Conditioning Fundamentals	ACD 101	3
Air Conditioning Phase I-IV	ACD 120, 125, 210, 220	16
Technical Math I-II	MTH 110, 120	6
Practical Communications	WRT 150	3
Technical Communications	WRT 154	3
Technical Physics I-II	PHY 101-102	6
Human Relations	MAN 110	3
Combination Welding	WLD 110	3
		<hr/> 43

Air Conditioning and Sheet Metal Technology Associate of Applied Science Degree For Direct Employment

Required Courses (75)	First Semester	Cr. Hrs.
Air Conditioning Fundamentals	ACD 101	3
Air Conditioning Phase I	ACD 120	4
Technical Math I	MTH 110	3
Sheet Metal I	SML 110	4
Technical Drafting I	DFT 150	3
		<hr/> 17
	Second Semester	
Sheet Metal Pattern Layout I	SML 130	3
Air Conditioning Phase II	ACD 125	4
Technical Math II	MTH 120	3
Sheet Metal II	SML 120	4
Practical Communications	WRT 150	3
Combination Welding	WLD 110	3
		<hr/> 20

Air Conditioning Phase III
 Human Relations
 Technical Physics I
 Sheet Metal Pattern Layout II
 Technical Communications
 Estimating I

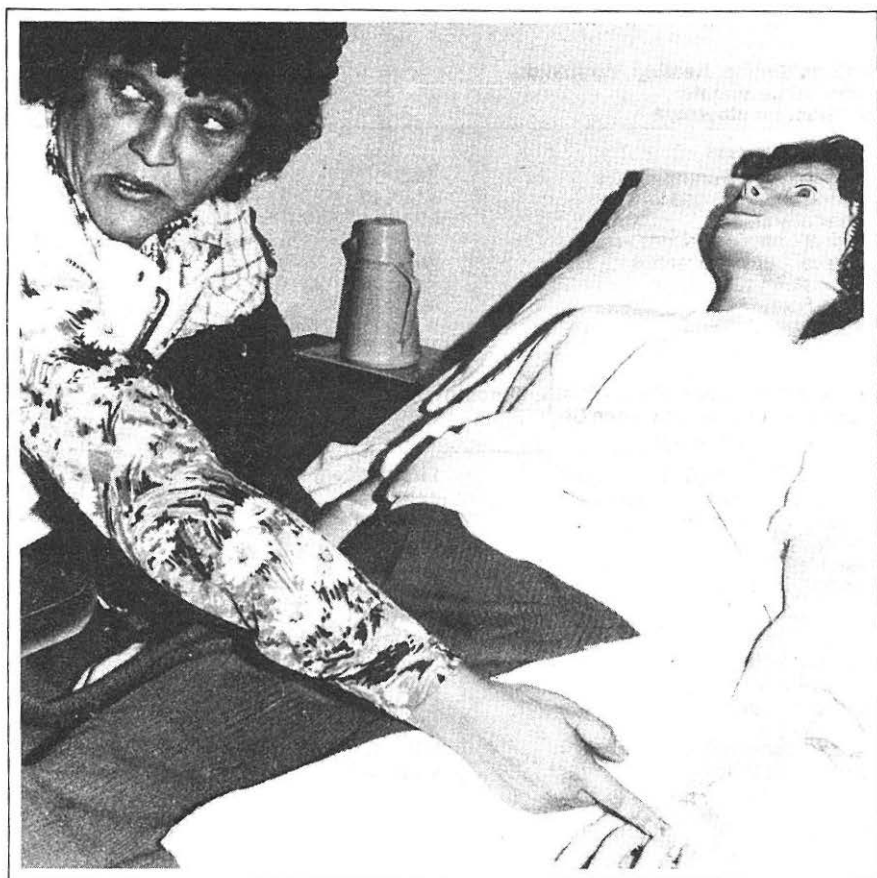
Third Semester

ACD 210	4
MAN 110	3
PHY 101	3
SML 135	3
WRT 154	3
ACD 250	3
	<hr/> 19

Air Conditioning Phase IV
 Sheet Metal Pattern Layout III
 Architectural Sheet Metal
 Estimating II
 Technical Physics II
 Elective in Humanities, Psychology,
 Sociology or Philosophy

Fourth Semester

ACD 220	4
SML 210	3
SML 220	3
ACD 260	3
PHY 102	3
	<hr/> 3
	19



Allied Health

Allied Health Programs offer opportunities for men and women who wish to prepare for a career in a health-related field. Programs range from one-semester to two-and-three years in length, and prepare the graduate for certification, registry, and/or licensure. In response to community needs, special refresher and continuing education courses and programs also are offered. Programs, which provide an open or ladder curriculum for career mobility, permit students to move to succeeding levels of study upon the satisfactory completion of their entering program levels. For example, a student entering and satisfactorily completing a certificate program in an allied health field may wish to continue study at the advanced certificate or associate degree levels, if applicable.

Except for Emergency Medical Technicians, Allied Health Service Aides, Nursing Assistants and Patient-Care Attendants, Homemakers and Home Health Aides, and Unit Clerks, which are programs with open admission policies, the following application deadline dates apply:

March 1 for Fall Entering Classes, and October 1 for Spring Entering Classes, where applicable.

Applicants are notified of the action taken by the selections committee by the following dates:

May 1 for Fall Entering Classes, and December 1 for Spring Entering Classes, where applicable.

Because of limited laboratory space and clinical facilities, and the delicate balance of job opportunities in the health field, most programs have limited enrollments. These specialized allied health programs have specific eligibility requirements because of enrollment limitations, certification, registry, licensure, program accreditation regulations, and related criteria.

Therefore, students requesting placement into such programs are required to adhere to the policies and procedures which follow:

Admission Policies:

1. Application for admission to programs in allied health *in addition to* the application required for general admission to the college.
2. Applicants are expected to demonstrate certain educational proficiencies, which may vary from one program to another; the applicant should consult the section of the catalog which describes each program and/or consult with the admission secretary for Allied Health Programs to determine the specific educational proficiencies required by each program.
3. Except for those programs with open admission policies, a Selections Committee for Allied Health Programs makes final selections for each entering class, assuring that consistent selection practices and criteria are employed.
4. Applications for admission to allied health programs are considered for ONE APPLICATION PERIOD ONLY. Students, who desire to be a candidate for admission to the next entering class, must submit a new application for admission to the program.
5. All applicants are responsible for submitting completed applications by the proper application deadlines.
6. Preference is given to Arizona residents in the college district.

Admission Procedure:

1. Application packets may be obtained from the career and advising centers at each campus in the district for the following allied health programs.

Downtown Campus

Allied Health Service Programs—Beginning Level

- Nursing Assistants/Patient-Care Attendants
- Homemaker/Home Health Aides
- Unit Clerks
- R. N. Refresher
- Nursing Assistant
- Practical Nursing

West Campus

Associate Degree Nursing

Dental Programs

- Dental Assisting
- Dental Laboratory Technology
- Emergency Medical Technology
- Ophthalmic Technology
- Ophthalmic Dispensing
- Optical Laboratory Technician
- Radiologic (X-ray) Technology
- Respiratory Therapy

2. Completed applications (including official high school and college transcripts) must be received by the admissions secretary by the application deadline for the next entering class. Applicants must request the Registrar's Office to send Pima Community College transcripts to the admissions secretary. Applications received later than the application deadline date will not be evaluated.

3. All applicants can receive information regarding pre-entrance testing and interviews, when appropriate, from the admissions secretary in the Career and Advising Center. (Refer to the program section of the catalog for specific requirements.)

4. By the "selections date" in each application period, the selections committee will notify each applicant of:

- Acceptance into the program,
- Placement as an alternate,
- Rejection.

5. An accepted applicant is required to submit, within two weeks of the acceptance date, a card of intent to enroll in the program. No deposit is required. Alternates will be placed as vacancies occur up to, and including, the entering date. Alternate status expires when the class has been filled in each enrollment period.

Health Core Curriculum:

A core curriculum operates in Health Sciences providing a foundation of study and supportive-elective study to students pursuing a career in the health care industry. Two courses are offered in the core: Introduction to Health Care (HCA 154) and Independent Studies in Health Sciences (HCA 99). Course descriptions may be found under Health Care.

S.A.R.A.H.E.L.P. Consortium:

The Southern Arizona Regional Allied Health Educational Linkage Program (SARAHHELP) was developed to expand career opportunities to community college students, and to attract well-trained health workers to rural areas of southern Arizona. A consortium between the Arizona College of Technology, Arizona Western College, Cochise College and Pima Community College is designed to help solve the rural health manpower needs by developing educational linkages which will provide, more adequately, prepared personnel throughout Pima, Santa Cruz, Cochise and Yuma Counties.

The Pima County Community College District provides specialized training in the allied health sciences at the post-secondary level and in close clinical affiliation with the University of Arizona Medical Center, greater metropolitan Tucson and Phoenix hospital complexes, and health care centers in Cochise and Yuma Counties. Under SARAHHELP, students take one semester to one year of liberal arts, pre-technical and some introductory technical study at their home community college, followed by one year of technical and clinical training in the Pima County Community College District. Some clinical training for these allied health programs may occur within the student's home community (e.g., at the Cochise County Hospital, Sierra Vista Community Hospital and the Arizona Regional Medical Center).

At the completion of each allied health program, students receive an Associate degree or an advanced certificate from Pima Community College, and also qualify to take the national and/or state certifying registry/licensure examination in their particular specialty. Study through SARAHELP permits students to receive the best technical training available in the Southern Arizona Region, avoiding costly duplication of college-based programs, and encourages them to return to their home community for service.

Graduates are prepared to enter the health care industry as ophthalmic dispensers, radiologic technologists, respiratory therapists and dental assistants.

The first year curriculum at the home community college consists of courses in the basic sciences, communications, social sciences and humanities disciplines which are generally common to all the allied health programs. The introduction to health care course, during the first semester, provides the student opportunities to become oriented to the health occupations, acquire knowledge of health science fundamentals and explore health care delivery concepts and applications common to all health workers.

The summer session (where applicable) and the second year curriculum at Pima Community College concentrates on the clinical and theoretical education within the student's area of occupational choice. Because of national standards, some programs extend beyond the spring semester of the second year, placing the student in a period of clinical externship.

Students who successfully fulfill requirements for admission to their home college may apply for admission to this program. Because of limited laboratory space and clinical facilities, and the delicate balance of job opportunities in the health field, most programs have limited enrollments. These programs have special eligibility requirements, and a special SARAHELP application is needed in addition to the general admission application.

All applicants are responsible for submitting completed applications by the proper deadlines announced by the registrar's office. Pre-entrance examinations and interviews also may be required. Preference is given to Arizona residents in the college district.

Interested students should consult the college catalog for career counselors and/or the SARAHELP coordinator at the respective colleges for information on enrollment, fees, scholarship, stipend and housing. For further information, contact the SARAHELP director at the District Office of Allied Health.

Allied Health Services

This curriculum is designed to maximize opportunities for learning so that students can adapt basic health worker skills to the varied delivery of health services. Students, upon completing the program, will be qualified to perform basic client care skills in hospitals and in long term and home care facilities as nursing assistants or patient hospital care attendants. Homemaker and home health aide skills are included. Clinic experience as unit clerks can be arranged.

Graduates are prepared to perform beginning health worker skills under the supervision of licensed health care personnel.

This is a one semester program consisting of three courses which include lectures, laboratory and clinical experience in community health facilities. Upon completion of 12 credit hours, the student will receive a Pima Community College Basic Certificate. Course work can be applied to other health career programs.

Acceptance into Program:

- Completion of Pima Community College acceptance requirements.
- Completion of special application for Allied Health Services Program.
- Completion of placement examinations in mathematics and reading comprehension. (Note—Applicants must place at the eighth grade level or better in reading comprehension.)
- Interview by the campus Allied Health Services Review Committee or a committee member.
- A physical examination, including a T.B. screening, is required upon acceptance into the program.

General Requirements:

- Total credits—12 semester hours.
- Successful completion of all academic and clinical program requirements.

Basic Certificate For Direct Employment

Required Courses		Lec.	Lab	Cr. Hrs.
Principles Anatomy, Physiology	LSC 102	3	+	3
Introduction to Health Care	HCA 154	3	+	0
Skills, Allied Health Service	HCA 150	2	+	9
				<hr/>
				12

Anthropology-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 transfer degree program and a basic certificate that emphasizes archaeological fieldwork.

Anthropology

The anthropology program enhances and develops the student's awareness of the cultural heritage and present cultural diversity of the Southwest, as well as prepares the student for upper division study in Anthropology at a major university. The curriculum generally parallels the lower division Anthropology/Liberal Arts requirements at the state universities.

All students must complete the core curriculum of 18 units (ANT 100, 110, 210, 215, 220, 225). In addition, students with interests in archaeology/physical anthropology must also complete Option I and students with interests in cultural anthropology/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 Certificate.

Associate of Arts Degree For Transfer

Required Courses (67-71)	First Semester	Cr. Hrs.
Human Origins and Prehistory	ANT 100	3
Introduction to Cultural Anthropology	ANT 110	3
Foreign Language*		4
Geology I	ESC 120	4
Writing I	WRT 101	3
		<hr/> 17
	Second Semester	
Cultural Anthropology	ANT 210	3
Physical Anthropology	ANT 220	3
Foreign Language*		4
Geology II	ESC 121	4
Writing II	WRT 102	3
		<hr/> 17
	Third Semester	
Archaeology	ANT 225	3
Individual Studies in Anthropology	ANT 290	3
Humanities**		3-4
Foreign Language*		4
Anthropology Option I or II***		4
		<hr/> 17-18
	Fourth Semester	
The Nature of Language	ANT 215	3
Humanities**		4-6
Foreign Language*		4
Anthropology Option I or II***		3-4
Survival	REC 118	2
		<hr/> 16-19
	Summary	
Major Requirements		21
Science Requirements		8
Writing		6
Language Proficiency and/or Electives*		16
Humanities**		8-9
Required Option I or II***		8-9
		<hr/> 67-69

NOTES:

*Fulfilled by either 4 semesters (2 years) of any one foreign language or 2 semesters (1 year) each of 2 different languages. Students meeting the language proficiency requirement may take 6–8 units of transferable electives selected in consultation with an advisor.

**Choose one of the following options:

- Humanities I and II (HUM–110, 111)
- Humanities I or II and 6 units from option c.
- Not less than 9 units from the following 3 groups, with no more than 6 units from any one group:
 - DRA 240, 241; LIT 241, 242, 261, 265, 270, 271, 272
 - PHI 101, 102, 130
 - ART 130, 131, 132; MUS 151, 201, 202.

***Option I—Students with area emphasis in Archaeology/Physical Anthropology should take Ecology I and II (LSC 150 & 151).

Option II—Students with area emphasis in Cultural Anthropology/Linguistics should select six units to be taken from Anthropology, History, Psychology, Sociology in consultation with an advisor.

Note: Students, after successful completion of the program, may be eligible to transfer to upper class levels at a four-year university. Students should consult the anthropology major requirements at the college or university to which they plan to transfer.

Archaeological Fieldwork

The archaeology fieldwork curriculum at Pima Community College is designed to provide interested persons with a basic level of practical archaeological experience. Field courses are taught within the context of Arizona prehistory and emphasize an appreciation of the archaeological and environmental resources of the Southwest.

Students have the opportunity to develop their skills and abilities in field archaeology through instructor directed excavation, surveying, mapping, recording, and analysis of archaeological materials. Emphasis is placed on actual field experience, supplemented by appropriate lecture courses. Specific objectives for the curriculum are: provide field experience in the areas of public archaeology and cultural resource management, give avocational archaeologists and interested members of the community the opportunity to increase their skills and knowledge of archaeology, promote conservation and preservation of cultural resources, and to contribute to the knowledge of the prehistory of Southern Arizona. Upon the completion of the courses listed, an individual will receive a Basic Certificate in Archaeological fieldwork.

Archaeological Fieldwork Basic Certificate

Required Courses		Cr. Hrs.
Archaeology of the Southwest	ANT 141	3
Archaeology	ANT 225	3
Archaeology Laboratory	ANT 250	3
Archaeology Field Methods	ANT 275	4
Advanced Archaeology Excavation	ANT 277	3
Archaeology Surveying	ANT 276	3
Electives*		4
		<hr/> 23

*In consultation with Faculty Advisors.

Applied Design

The Functional Design program provides the student with the skills and techniques needed for employment. It is not intended as a transfer program, but rather provides the student with experience in solving problems of design and production of a product. Drafting students may find this program very useful in furthering their skills. Emphasis in the commercial graphics courses are given in merchandizing and marketing areas.

The Interior Design program consists of a series of highly practical courses leading to apprenticeship or direct employment. Interior Design offers the student a variety of skills and experience in such areas as landscaping, custom furniture design, built-ins, light-weight structures, and unique Southwestern environmental problems (heating, cooling and solar energy).

Functional Design Program Basic Certificate

Required Courses		Cr. Hrs.
Industrial Graphics	DES 111	3
Introduction to Functional Design	DES 150	3
Design for Living	DES 156	3
Industrial Functional Design	DES 250	3
Construction Drafting	DFT 110	4
		<hr/> 16

Interior Design Program Basic Certificate

Required Courses		Cr. Hrs.
Home Furnishings	DES 155	3
Interior Design	DES 156	3
Spatial Design	DES 255	3
Interior Environmental Design	DES 256	3
Practical Communications or	WRT 150	
Construction Drafting	DFT 110	3-4
		<hr/> 15-16

Interior/Functional Design Advanced Certificate

Required Courses	First Semester	Cr. Hrs.
Industrial Graphics	DES 111	3
Introduction to Functional Design	DES 150	3
Home Furnishings	DES 155	3
Design for Living	DES 156	3
Construction Drafting I	DFT 110	4
		<hr/> 16
	Second Semester	
Light-Weight Structures	DES 151	3
Commercial Graphics or	DES 211	
Landscape Gardening	GTC 090	3
Industrial Functional Design	DES 250	3
Spatial Design	DES 255	3
Interior Environmental Design	DES 256	3
		<hr/> 15

Interior Design
Associate of Arts Degree

Required Courses (62-66)

Industrial Graphics
 Design for Living
 Writing I or
 Practical Communications
 Construction Drafting I
 Elective

First Semester

DES 111
 DES 156
 WRT 101
 WRT 150
 DFT 110

Cr. Hrs.

3
 3

 3
 4
3-4
 15-17

Second Semester

Light-Weight Structures
 Introduction to Functional Design
 Home Furnishings
 Writing II or
 Technical Communications
 Business and Industry

DES 151
 DES 150
 DES 155
 WRT 102
 WRT 154
 MAN 110

3
 3
 3

 3
3-4
 15-16

Third Semester

Industrial Functional Design
 Spatial Design
 Commercial Graphics
 Salesmanship
 Electives

DES 250
 DES 255
 DES 211
 MKT 113

3
 3
 3
 3
3-4
 15-16

Fourth Semester

Interior Environmental Design
 Communigraphics
 Landscape Gardening
 Applied Design or
 Cooperative Education
 Electives

DES 256
 MET 050
 GTC 090
 DES 280
 DES 299

3
 3
 3

 3-4
3-4
 15-17

Apprentice Related Instruction

Pima Community College works cooperatively with local and state apprenticeship committees to offer related instruction in a number of apprentice programs. Apprentice related instruction currently is offered in the following areas:

Automotive	Lineman
Bricklaying	Meterman
Cableman	Operating Engineer
Carpentry	Painting & Decorating
Electric Distribution Developer	Pipe Fitting
Engineering Technician	Plastering & Cement Masonry
Floor Covering	Plumbing
General Construction	Sheet Metal
Glazing	Shop Electrician
Ironworking	Substation Electrician
Lathing	

Students will be awarded a Certificate of Completion upon finishing all apprentice related instruction in a chosen program. It is also possible to work toward a degree while enrolled in apprentice programs.

Those wishing to progress toward an Associate of Applied Science degree (trade and industrial technology option) may qualify for credit in related technical instruction, from 12 to 28 credit hours, upon completing the apprenticeship. In order to have a student meet the requirements of this degree, no less than 28 credit hours must be in approved technical courses. In addition to the major subject requirements, the following additional course requirements also must be met:

Writing	6 credit hours
Mathematics and/or Science	12 credit hours
Social Sciences	6 credit hours

The remaining 12 credit hours, to meet the minimum degree requirement of 64 credit hours, should be chosen in consultation with the College Apprentice Coordinator.

DEGREE PROGRAM: (Associate of Applied Science—Trade and Industrial Technology):

28 hours	Apprenticeship related instruction and/or approved technical courses
6 hours	Writing
12 hours	Mathematics and/or Science (select 12 hours from the following—mathematics, astronomy, chemistry, earth sciences, physics)
6 hours	Social Sciences (select six hours from the following—anthropology, history, humanities, literature, philosophy, sociology, management)
12 hours	Electives
64 hours (total)	

CERTIFICATE PROGRAM: Students completing their apprenticeship related instruction will be awarded a Certificate of Completion by Pima Community College.

Information on how to become an apprentice may be obtained from the Bureau of Apprenticeship and Training, United States Department of Labor, Federal Building, 301 West Congress Street, Tucson, Arizona 85701. Information on college related instruction may be obtained from the Coordinator of Apprenticeship Training, Pima Community College, Downtown Campus.

Arts, Applied

(The Art area offers two programs of study—Applied Arts and Fine Arts.)

This program provides students the opportunity to gain experience in several media or to concentrate in a single area of interest. Art electives and supportive courses should be selected according to the major emphasis of interest. (Suggested sequence.)

Associate of Applied Arts Degree

Required Courses	First Semester	Cr. Hrs.
Basic Design	ART 100	3
Drawing I	ART 110	3
Art and Culture I	ART 130	3
Writing I	WRT 101	3
Humanities Elective*		3-4
		15-16
	Second Semester	
Color and Design	ART 115	3
Three Dimensional Design	ART 120	3
Art and Culture II	ART 131	3
Writing II	WRT 102	3
Humanities Elective*		3-4
		15-16

*Humanities Elective include: Art, Humanities, Literature, Philosophy, and Music.

Third and Fourth Semesters

Art Requirements: Select any eight additional art courses from the following categories for a total of 24 credits. (Students may include ART 299.)

Arts and Crafts

(non-transferable)

Lapidary, ART 060

Ceramics I, II, & III, ART 160, 260, 261

Metalwork, ART 170

Weaving, ART 179, 180

Fiber Structures, ART 181

Photography

Photography I & II, ART 140, 141

Commercial Photography, ART 143

History of Photography, ART 230

Art History

Masks, ART 136

Art of the 20th Century, ART 132

History of Art and Design, ART 231

Pre-Columbia Art, ART 135

Painting/Drawing and Sculpture

Drawing II, ART 210

Printmaking I, II, ART 212, 214

Life Drawing, ART 213

Sculpture, ART 220

Painting, ART 215

Silkscreen, ART 216

General Education Requirements: Select any two courses from the Social Sciences or Physical Sciences areas for a total of six to eight credits.

Arts, Fine

(The Art area offers two programs of study—Applied Arts and Fine Arts.)

This program provides four semesters of study for students who plan to transfer to a four year institution in the areas of painting, drawing, sculpture, printmaking, photography, crafts, art history, or art education. Students should consult the catalog of the institution to which they plan to transfer. (Suggested sequence.)

Associate of Arts Degree (Fine Arts Transfer)

Required Courses	First Semester	Cr. Hrs.
Basic Design	ART 100	3
Drawing I	ART 110	3
Art and Culture I	ART 130	3
Writing I	WRT 101	3
Humanities Elective*		3-4
		<hr/> 15-16
	Second Semester	
Color and Design	ART 115	3
Three Dimensional Design	ART 120	3
Art and Culture II	ART 131	3
Writing II	WRT 102	3
Humanities Elective*		3-4
		<hr/> 15-16
	Third Semester	
Drawing II or Life Drawing	ART 210 ART 213	3
Art Electives		6
Lab Science		4
Social Science Elective		3
		<hr/> 16
	Fourth Semester	
Art Electives		9
Social Science Elective		3
Math or Lab Science Elective		3-4
		<hr/> 15-16

*Humanities Electives include: Art, Humanities, Literature, Philosophy, and Music.

Automotive Technology

The Automotive Technology department offers a variety of study avenues including two-year Associate degree programs, a two-year technical certificate program and several automotive mechanic basic certificate programs as well as special interest automotive courses.

Courses are designed to meet the needs of the beginner, the professional mechanic who wants to update his skills, and the do-it-yourself person interested in knowing his or her car. The degree program provides students with educational opportunities that allow for rapid entry into the automotive field beyond the mechanic position. Those enrolled in the Mechanics Technical Certificate program are trained in general automotive repair. The various basic mechanic certificate programs offer opportunities for specialization in a particular area of automotive repair. Persons who later decide to advance to the technical certificate or degree level may use the basic certificate programs as a beginning step.

Programs also can be arranged for students planning to transfer to four-year institutions. Students, however, should follow the first two-year requirements of the college or university to which they plan to transfer.

All students taking lab courses are required to have a basic set of tools, safety glasses and work clothing.

A person majoring in an Automotive Technology curriculum may find Cooperative Education offers an ideal way of gaining additional skills-application experience while attending classes. Consult a Cooperative Education teacher-coordinator for details.

Automotive Engine Repair and Rebuilding Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Automotive Engine Service Repair	AUT 122	3
Automotive Diesel Engines	AUT 124	3
Engine Tune-Up	AUT 125	4
Human Relations	MAN 110	3
		<hr/> 17

Automotive Tune-Up and Air Conditioning Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Engine Tune-up	AUT 125	4
Automotive Electricity I-II	AUT 128-129	6
Automotive Air Conditioning	AUT 142	3
Human Relations	MAN 110	3
		<hr/> 20

Power Transmission Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Automatic Transmissions	AUT 132-133	8
Drive Line	AUT 136	4
Human Relations	MAN 110	3
		<hr/> 15

**Suspension and Brakes
Basic Certificate
For Direct Employment**

Required Courses		Cr. Hrs.
Automotive Chassis	AUT 138	4
Drive Line	AUT 136	4
Automotive Brakes	AUT 140	4
Human Relations	MAN 110	3
		<hr/> 15

**Automotive Mechanics
Technical Certificate
For Direct Employment**

Required Courses (52)		Cr. Hrs.
First Semester		
Internal Combustion Engines	AUT 120	4
Automotive Electricity I	AUT 128	3
Automatic Transmission Removal	AUT 132	4
Technical Math I*	MTH 110	3
		<hr/> 14
Second Semester		
Auto Engine Service Repair	AUT 122	3
Automotive Electricity II	AUT 129	3
Automatic Transmission Rebuilding	AUT 133	4
Technical Physics I	PHY 101	3
		<hr/> 13
Third Semester		
Engine Tune-Up	AUT 125	4
Automotive Chassis	AUT 138	4
Practical Communications	WRT 150	3
Human Relations	MAN 110	3
		<hr/> 14
Fourth Semester		
Drive Line	AUT 136	4
Automotive Brakes	AUT 140	4
Automotive Air Conditioning	AUT 142	3
		<hr/> 11

Students who enter the program with advance standing or who desire additional training may take AUT 124, Automotive Diesel Engines in addition to the above program requirements.

*This course requires prerequisite or placement test.

**Automotive Technology
Associate in Applied Science Degree
For Direct Employment**

Required Courses (64)		Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Automotive Electricity I	AUT 128	3
Automatic Transmission Removal	AUT 132	4
Technical Math 1*	MTH 110	3
Technical Physics I	PHY 101	3
		<hr/> 17

Second Semester		
Auto Engine Service Repair	AUT 122	
or Engine Tune-Up	AUT 125	3 or 4
Automotive Electricity II	AUT 129	3
Automatic Transmission Rebuilding	AUT 133	4
Technical Math II	MTH 120	3
Technical Physics II	PHY 102	3
		<hr/> 16 or 17
Third Semester		
Auto Engine Service Repair	AUT 122	
or Engine Tune-Up	AUT 125	3 or 4
Automotive Chassis	AUT 138	4
Human Relations	MAN 110	3
Practical Communications	WRT 150	3
Introduction to Psychology I	PSY 100	3
		<hr/> 16 or 17
Fourth Semester		
Automotive Brakes	AUT 140	4
Automotive Air Conditioning	AUT 142	3
Drive Line	AUT 136	4
Technical Communications	WRT 154	3
		<hr/> 14

Students who enter the program with advance standing or who desire additional training may take AUT 124, Automotive Diesel Engines in addition to the above program requirements.

*This course requires prerequisite or placement test.

Automotive Technology Associate of Science Degree For Transfer

Required Courses (68)		Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Automotive Electricity I-II	AUT 128-129	6
Automatic Transmissions	AUT 132-133	8
Auto Engine Service Repair	AUT 122	3
Engine Tune-Up	AUT 125	4
Automotive Chassis	AUT 138	4
Drive Line	AUT 136	4
Automotive Brakes	AUT 140	4
General Education Requirements		31
		<hr/> 68

Note: Automotive courses to be taken in the same order as for the Associate in Applied Science Degree program. The 31 credit hours of general education requirements must be taken for the Associate of Science Degree. General education courses taken at Pima should be checked against a catalog of the college or university to which the student plans to transfer.

Aviation Mechanics

The aviation mechanics courses prepare experienced aircraft mechanics for federal airframe and powerplant certification. A minimum of 30 months experience of concurrently performing the duties of airframe and powerplant maintenance, or at least 18 months experience in performing the duties appropriate to the rating sought are prerequisites for course entry. A review of experience must be made by the instructor in all cases prior to registration.

A letter of completion will be awarded for Airframe Mechanics (AVM 220) and for Powerplant Mechanics (AVM 230). Basic certificates also are awarded to qualified students.

Airframe and Powerplant Mechanics Basic Certificate For Direct Employment

Required Courses

Airframe Mechanics
Powerplant Mechanics
Combination Welding
Technical Math I
Human Relations

AVM 220
AVM 230
WLD 110
MTH 110
MAN 110

Cr. Hrs.

6
5
3
3
3

20



Bilingual

A variety of subjects is offered on a bilingual-bicultural education basis for all persons fluent in Spanish. This is not a remedial program, but is aimed at developing competency in Spanish for literacy, vocational, professional and cultural purposes.

Some 100 courses are being offered under the Bilingual Program in areas of drama, pre-school education, machine shop, welding, electronics, folklore dances, business, home economics, physical education, humanities, history, English as a second language (ESL), reading, literature, Spanish and others. Some of the courses are listed in the individual sections of the catalog.

Courses in the Bilingual Program, with the exception of those prefixed SPA or ESL, offer students the advantage of receiving credit for the course, plus additional credit in Spanish at no extra charge. Credit in Spanish is at the 50 or 100 level as it is assumed that if a student can pursue a bilingual course taught totally in Spanish, he has a knowledge of the language.

The student may, therefore, obtain 1 to 8 units of additional Spanish credit, but such credit is not awarded automatically. It must be petitioned for before the end of the course. The actual number of credits will be determined by the instructor teaching the course in cooperation with the Spanish faculty based on the evaluation of the student's written and oral work.

Credit is divided as follows: a) 4 credits in Spanish 50 and/or 4 credits in Spanish 55, totalling 4 or 8 credits (Please note that credit in Spanish 50 and 55—conversational Spanish I and II—is not transferable); b) if a student is in a university transfer program, 2 credits may be awarded for Spanish 101 (Credits for the latter may be considered separately or together, totaling 2 or 4 credits respectively. The same is applicable to Spanish 102.); c) Reading 52 will receive 1 elective credit in Spanish; d) if a bilingual course consists of 1 unit, the Spanish credit is 1 unit of elective credit. (This additional credit cannot be awarded if credit in Spanish 101, 102, 50 and 55 had been earned previously through enrollment in these classes.)

Programa Bilingüe

El colegio está ofreciendo una variedad de cursos, tomando como base la educación bilingüe-bicultural para todas las personas que ya hablan español.

Unos 100 (cien) cursos se ofrecen en el Programa Bilingüe, tales como drama, educación pre-escolar, máquinas y herramientas, soldadura, electrónica, bailes folklóricos, negocios, economía doméstica, educación física, humanidades, historia, inglés como segundo idioma, lectura, literatura, español, y muchos otros. Los cursos se encuentran en el catálogo bajo las secciones de programas respectivos.

Es un programa en el que se ha señalado el propósito de obtener mayor dominio en el idioma, con fines profesionales, culturales y técnicos. Hay ventaja de obtener crédito adicional en español en estos cursos, exceptuando aquellos que están señalados con prefijos SPA o ESL, sin pagar más dinero.

El crédito en español es otorgado al nivel 50 y 100, porque se considera que si el estudiante puede seguir una materia del Programa Bilingüe impartida en español, este estudiante ya tiene conocimiento de dicho idioma.

Por consiguiente, este estudiante puede obtener de 1 a 8 unidades de crédito adicional en español, pero tal crédito no se otorga automáticamente y es necesario hacer petición, antes de terminar el curso, para recibir este crédito adicional. El número exacto será determinado por la facultad de español en cooperación con el instructor del curso dependiendo en la evaluación del trabajo oral y escrito del estudiante.

Las unidades se dividen así: a) 4 unidades en Español 50 y/o 4 unidades en Español 55 sumando a 4 o 8 unidades. Favor de tomar en cuenta que las unidades en Español 50 y 55 no son transferibles. b) Si el estudiante se encuentra en un programa transferible a la universidad se puede otorgar crédito en Español 101 o 102, si no se ha recibido ya este crédito por medio de inscripción en estos cursos. Las unidades del curso 101 pueden ser consideradas en forma respectivamente. Este mismo concepto se aplicará a Español 102. c) Reading 52 tiene el valor de un crédito electivo de español. d) Si el curso Bilingüe consiste de una unidad de crédito, el crédito en español será una unidad elegible. Este crédito adicional no se otorgará si crédito se ha recibido anteriormente en Español 101, 102, 50 o 55 por medio de inscripción en estos cursos.

Business Administration Transfer

Arizona's three universities normally require that professional courses in business administration be taken in the last two years of a four-year program. Only a limited amount of work in business courses is offered below the junior level. The objective of this policy is to permit students to acquire a foundation of work in the basic arts and sciences as a prerequisite for professional courses in business.

All business programs accredited by the American Association of Collegiate Schools of Business require students to take a minimum of 40 percent of the four-years work in the arts and sciences, including work in mathematics, social science, humanities and the natural sciences. Students desiring a four-year degree are advised to take a majority of their work during the first two years in the arts and sciences, including a strong background in mathematics.

Students taking their first two years of work at a community college should take only those courses in business and economics that are offered as freshman or sophomore level courses at any of the three Arizona universities. These lower division courses are numbered 1 through 299 at the University of Arizona, Arizona State University and Northern Arizona University. The introductory course in business law will be accepted as an exception to this policy. A maximum of 30 hours of business and economics courses will be accepted from community colleges toward a bachelor's degree in business administration.

Professional business courses taught in the junior and senior years in the three state universities may not be completed at a two-year college for transfer credit in the business core or major field of specialization. Such courses may be utilized in the free elective category subject to the 30-hour limitation. Courses taught as vocational or career classes at the community college which are not taught in the colleges of business at any of the three state universities will not be accepted for credit toward a bachelor's degree. Courses taught in the upper-division business core at the three state universities must be completed at the degree-granting institution unless transferred from an accredited four-year school.

The following general pattern of courses is recommended for students completing their first two year's work in a community college and planning to transfer to one of Arizona's universities without loss of credit.

Pre-Professional Courses: 30 credit hours

Accounting	6
Economics	6
Quantitative Analysis & Statistics	6
Business Law	3
Lower-Division Business Elective	9

General Education: 34-42 credit hours*

English	Humanities
Mathematics	Physical Education
Science	Social Sciences

* Contingent upon the university of your choice.

Associate of Science Degree For Transfer

Students must adhere to course prerequisites as indicated in the catalog.

Required Courses (62-66)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
PHI 120 or Natural Science*		3-4
American National Government	POL 110	3
Social Science Elective or Math**		3
Introduction to Computers	CSC 100	3
Physical Education Elective	PED	1
		<hr/> 16-17

Second Semester		
Writing II	WRT 102	3
PHI 120 or Natural Science		3-4
Finite Math	MTH 170	3
Social Science Elective**		3
Business and Professional Communication	SPE 120	3
Physical Education Elective	PED	1
		<hr/> 16-17
Third Semester		
Principle of Accounting I	ACC 101	3
Introduction to Microeconomics	ECO 100	3
Humanities or Foreign Language Elective***		3-4
Topics in Calculus	MTH 175	3
Statistical Methods I	BUS 205	3
		<hr/> 15-16
Fourth Semester		
Principle of Accounting II	ACC 102	3
Introduction to Macroeconomics	ECO 101	3
Humanities or Foreign Language Elective***		3-4
Social Science Elective or CSC 160 (Cobol)****		3
Statistical Methods II	BUS 206	3
		<hr/> 15-16

*Fulfilled by PHI 120 and 3-4 units of natural science or by two semesters of Natural Science from the following list: AST 101-102; LSC 103-104; CHM 101-102; ESC 101-102; LSC 207-208; PHY 121-122. (Sciences need not be the same.)

**Students who have not completed a college algebra equivalent in high school should take MTH 150 during the first semester of the freshman year and delay completion of the social science requirement. Otherwise, two three-unit social science courses which are open to freshmen must be completed in the freshman year. They may be chosen from courses in anthropology, geography (ESC-103), psychology, or sociology.

***Fulfilled by completion of 8-10 units selected from Humanities or Foreign Language Option:

Choose one of the following options:

- (1) 2 semesters of a single foreign language (8 units)
- (2) Humanities 110 and 111
- (3) HUM 110 OR HUM 111, Plus 6 units from option 4
- (4) No less than 9 units from the following 3 groups:
 - (a) DRA 240, 241; LIT 241, 242, 261, 265, 270, 271, 272
 - (b) PHI 101, 130
 - (c) ART 130, 131, MUS 151

****Students who took MTH 150 in the first semester of the freshman year should complete the social science requirement during the second semester of the sophomore year. Students who intend to major in accounting, information systems or operations management, will enroll in COBOL Programming, CSC 160, and complete the social science elective in the junior year.

Note: It is the student's responsibility to obtain appropriate program information at the university of his/her choice on a regular basis.

Chemistry

Associate of Science Degree For Transfer

Suggested Courses (62-66)

Writing I
General Chemistry I
College Algebra & Trigonometry
Social Science Elective*
Physical Education

Writing II
General Chemistry II
Anal. Geometry & Calculus I
Introductory Physics I
Fortran IV Programming
or Social Science Elective

Organic Chemistry I
Anal. Geometry & Calculus II
Introductory Physics II
Humanities Elective
Physical Education

Organic Chemistry II
Anal. Geometry & Calculus III
Humanities Elective
Elementary German I or
Social Science Elective

First Semester

WRT 101	3
CHM 120	4
MTH 160	5
	3
PED	1
	<hr/> 17-18

Second Semester

WRT 102	3
CHM 121	4
MTH 180	3
PHY 121 or 131	4
CSC 140	3-4
	<hr/> 17-18

Third Semester

CHM 240	4
MTH 185	3
PHY 122 or 132	4
	3-4
PED	1
	<hr/> 15-16

Fourth Semester

CHM 241	4
MTH 215	4
	3-4
GER 110	4 or
	3
	<hr/> 14-16

*For course electives in Humanities and Social Sciences consult the catalog of the college or university you plan to enter.

NOTE: The courses suggested meet University of Arizona requirements for the first two years of a Bachelor of Science degree.

Computer Science

Various Computer Science programs consist of one, two and four semesters of study, with the four semester program leading to an Associate of Applied Science degree.

Certificates are awarded upon completion of the shorter programs, indicating that the student is qualified as a computer operator, a data entry operator or a control technician.

Students entering the pre-computer science program as a preliminary to additional study in business administration, engineering, mathematics, or similar fields at a four-year college or university should plan their programs to include mathematics through calculus, basic computer science and statistics.

Students planning to transfer to a four-year institution should follow the first two-year requirements of the particular college or university to which they plan to transfer.

The continuing education program is designed for those who hold an Associate of Applied Science degree in Computer Science and have at least two years of programming experience.

Data Entry Operator Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Data Entry	CSC 110	3
Introduction to Business	BUS 100	3
Writing I	WRT 101	3
Reading	REA 100 series	4
Mathematics of Business or Algebra II	BUS 51 MTH 130	3
Job Entry Procedures	CSC 195	1
		<hr/> 17

Data Entry Operator Technical Certificate For Direct Employment

Required Courses (32-33)	First Semester	Cr. Hrs.
Basic Certificate Requirements		17
	Second Semester	
Advanced Data Entry	CSC 115	3
Introduction to Computers	CSC 100	3
Reading (if required) or Electives		3-4
Work Stand/Job Attitudes	CSC 196	1
Calculating Machines	OED 121	2
Co-Op Training or Elective	CSC 299	3
		<hr/> 15-16

Computer Operator Technical Certificate For Direct Employment

Required Courses (35-37)	First Semester	Cr. Hrs.
Introduction to Computers	CSC 100	3
Computer Operations	CSC 150	3
Algebra II or Mathematics of Business	MTH 130 BUS 51	3
Reading	REA 100 series	4
Introduction to Business	BUS 100	3
Key Punch for Programming & Operations	CSC 197	1
Job Entry Procedures	CSC 195	1
		<hr/> 18

	Second Semester	
Principle of Accounting I	ACC 101	3
Systems Operations & Procedures	CSC 155	3
Writing I	WRT 101	3
Reading (if required) or Elective		3-4
Computer Science Elective	CSC	3
Work Stand/Job Attitudes	CSC 196	1
Data Processing Projects I	CSC 198	1-2
		<hr/> 17-19

**Computer Programmer/Analyst
Associate of Applied Science Degree
For Direct Employment**

Required Courses (63-65)	First Semester	Cr. Hrs.
Introduction to Computers	CSC 100	3
Principle of Accounting I	ACC 101	3
Writing I	WRT 101	3
Reading	REA 100 series	4
Algebra II or	MTH 130	
College Algebra	MTH 150	3
Key Punch for Programmer & Operator	CSC 197	1
		<hr/> 17
	Second Semester	
COBOL Programming	CSC 160	3
Principle of Accounting II	ACC 102	3
Writing II	WRT 102	3
Reading (if required) or Elective		3-4
College Algebra or	MTH 150	
CSC Elective**		3
		<hr/> 15-16
	Third Semester	
Introduction to Numerical Control	CSC 250	3
Systems Analysis	CSC 280	3
Advanced COBOL/File Management	CSC 260	4
Select two courses in continuing sequence with fourth semester.		6
A Statistical Methods I	BUS 205	(3)
B Finite Math	MTH 170	(3)
C Co-op Training	CSC 299	(3)
D Introduction to Microeconomics	ECO 100	(3)
E Cost Accounting	ACC 203	(3)
F CSC 200 level elective		(3)
		<hr/> 16
	Fourth Semester	
Job Entry Procedures	CSC 195	1
Work Stand/Job Attitudes	CSC 196	1
Systems Design	CSC 281	3
MACRO-10 Assembly Language or	CSC 274	
Fundamentals of Assembly Language	CSC 270	4
Select two courses following sequence of third semester		6-7
A Statistical Methods II	BUS 206	(3)
B Topics in Calculus	MTH 175	(3)
C Co-op Training	CSC 299	(3)
D Introduction to Macroeconomics	ECO 101	(3)
E Elective*		(3-4)
F CSC-200 level elective		(3)
		<hr/> 14-16

*Select from humanities or philosophy.

**CSC Courses numbering 140 and higher

**Systems Programmer*
Advanced Certificate
For Direct Employment**

Required Courses (29)	First Semester	Cr. Hrs.
FORTRAN IV Programming	CSC 140	3
Operating Systems	CSC 296	3
Analytical Geometry/Calculus I	MTH 180	3
		<hr/> 9
	Second Semester	
Systems Programming Theory	CSC 290	3
MACRO-10 Assembly Language	CSC 274	4
Analytical Geometry/Calculus II	MTH 185	3
		<hr/> 10
	Third Semester	
Current Topics in CSC	CSC 294	3
Analytical Geometry/Calculus III	MTH 215	4
Data Processing Projects II	CSC 298	3
		<hr/> 10

NOTE: Students majoring in computer science with non-business emphasis may substitute courses with approval of the department coordinator.

*Prerequisite for Program is AAS degree in Computer Science or equivalent.

Computer Specialist for Small Business

The Small Business Computer Specialist program will meet the following goals:

- To provide students with the diversity of skills needed to function as a computer specialist in a "one-man-shop."
- To provide a broad base of business and technology with which the small business computer employee can continue to develop skills for job advancement.
- To provide continuing education to allow currently employed computer personnel to shift their career paths to the small computer field.
- To provide hands-on training in the operation and programming of mini and/or micro computers.
- To use a variety of instructional methods and an interdisciplinary approach to emphasize the interrelationships between business, electronics and computers.
- To provide small businesses acquiring their first computer with competent, trained personnel to help acquire, install, program and run their computer.

Small Business Computer Specialist Associate of Applied Science Degree for Direct Employment

Required Courses (65-68)	First Semester	Cr. Hrs.
Introduction to Computers	CSC 100	3
Writing I or Practical Communications	WRT 101	
	WRT 150	3
Algebra II or College Algebra	MTH 130	
	MTH 150	3
Intro. to Computer Operations	CSC 150	3
Reading	REA 100 series	4
Key Punch for Programmers and Operators	CSC 197	1
		17
	Second Semester	
COBOL Programming	CSC 160	3
Writing II or Technical Communications	WRT 102	
	WRT 154	3
Reading (if required) or elective*		3-4
Advanced Computer Operations	CSC 155	3
Elective*		3
Job Entry Procedures	CSC 195	1
Work Stand/Job Attitudes	CSC 196	1
		17-18
	Third Semester	
Microprocessor Fundamentals	CSC 250	3
RPG Programming	CSC 170	3
Accounting I	ACC 101	3
System Analysis	CSC 280	3
Elective*		3-4
		16-17
	Fourth Semester	
Accounting II	ACC 102	3
Systems Design	CSC 281	3
IBM/370 Assembly Language or MACRO-10 Assembly Language	CSC 270	4
	CSC 274	
Data Processing Projects II or Current Topics in Computer Science	CSC 298	3
	CSC 294	
Microprocessor Applications	CSC 255	3
		16

*Select from: MAN 122, MAN 124, ACC 203, CSC 140, CSC 274, HUM 110, HUM 111, PHI 120, PSY 100, PSY 101, ETR 001, ETR 100.

Dental Assisting Technology

Theoretical and practical preparation is provided to qualify graduates for immediate employment as Dental Assistants in hospitals, clinics and dental offices.

The total program consists of two semesters on campus and a minimum of 304 hours of clinical procedures in an affiliated dental clinic and/or private dental office. Students having successfully completed this curriculum will graduate with a certificate from Pima Community College and be eligible to take the National Certification Examination.

Acceptance Into Program:

- Completion of college and allied health program acceptance requirements.
- One semester of biology or zoology.
- Receipt of placement examination results for dental assisting applicants.
- Personal interview with the program coordinator.

General Requirements:

- Total credit: 35 credit hours.
- Work in residence: minimum, 28 credit hours of major (DAT) courses to be completed in residence or challenged. (Approval required by program coordinator.)

Restrictions:

- Correspondence study: maximum, 6 credit hours.
- Extension study: maximum, 6 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Advanced Certificate For Direct Employment

Required Courses (35)	First Semester	Lec.	Lab	Cr. Hrs.	
Personal Development	HDE 120	1	+	0	1
Writing I	WRT 101	3	+	0	3
Intro. Dental Assisting	DAT 61	3	+	0	3
Dental Assisting I	DAT 62	2	+	3	3
Oral Radiography	DAT 63	2	+	3	3
Dental Materials	DAT 64	2	+	3	3
Pre-Clinical Procedures	DAT 65	0	+	6	2
					<hr/>
					18
	Second Semester				
Speech	SPE 102	3	+	0	3
Dental Assisting II	DAT 66	2	+	3	3
Dental Assisting III	DAT 67	2	+	3	3
Clinical Procedures	DAT 68	0	+	24	8
					<hr/>
					17

Dental Laboratory Technology

The total program consists of four semesters on campus and includes 1,492 clock hours of laboratory practice. Graduates will be qualified for an Associate of Applied Science Degree with a major in Dental Laboratory Technology. Candidates for graduation are eligible for the National Board for Certification Recognized Graduates Examination. After three years of employment experience, graduates are eligible to take the Certified Dental Technician Practical Examination, administered by the National Board for Certification.

Acceptance Into Program:

- Completion of college and district allied health program applications and acceptance requirements.
- One year of mathematics (including algebra) and one year of science.
- Receipt of satisfactory placement examination (math, dexterity and reading comprehension) results for dental laboratory applicants.
- Personal interview and recommendation by program facilitator in dental laboratory technology.
- Evaluation and acceptance by district allied health programs admissions committee.

General Requirements:

- Total credit; 68 semester hours.
- Work in residence; minimum 36 semester hours of major (DLT) and related courses to be completed in residence.

Restrictions:

- Correspondence study: maximum 6 semester hours.
- Extension/transfer: maximum 32 semester hours, including above.

Minimal Grade Achievement:

"C" level.

Associate of Applied Science Degree For Direct Employment

Required Courses (68)	First Semester	Lec.	Lab	Cr. Hrs.	
Fundamentals of Chemistry I	CHM 110	3	+	3	4
Introduction Physics I	PHY 121	4	+	3	4
Dental Morphology	DLT 101	2	+	3	3
Non-Metallic Dental Materials	DLT 102	3	+	0	3
Complete Dentures	DLT 103	0	+	12	4
					18
	Second Semester				
Writing I	WRT 101	3	+	0	3
Fundamentals of Chemistry II	CHM 111	3	+	3	4
Introduction Physics II	PHY 122	4	+	3	4
Dental Laboratory I	DLT 104	2	+	3	3
Partial Denture Reconstruction	DLT 105	0	+	12	4
					18
	Third Semester				
Writing II	WRT 102	3	+	0	3
Small Business Management	MAN 124	3	+	0	3
Dental Laboratory II	DLT 201	2	+	3	3
Dental Metallurgy I	DLT 202	3	+	0	3
Fixed Bridgework	DLT 203	0	+	12	4
					16

Supervision
 Liberal Arts Elective
 Dental Laboratory III
 Dental Metallurgy II
 Ceramics

Fourth Semester

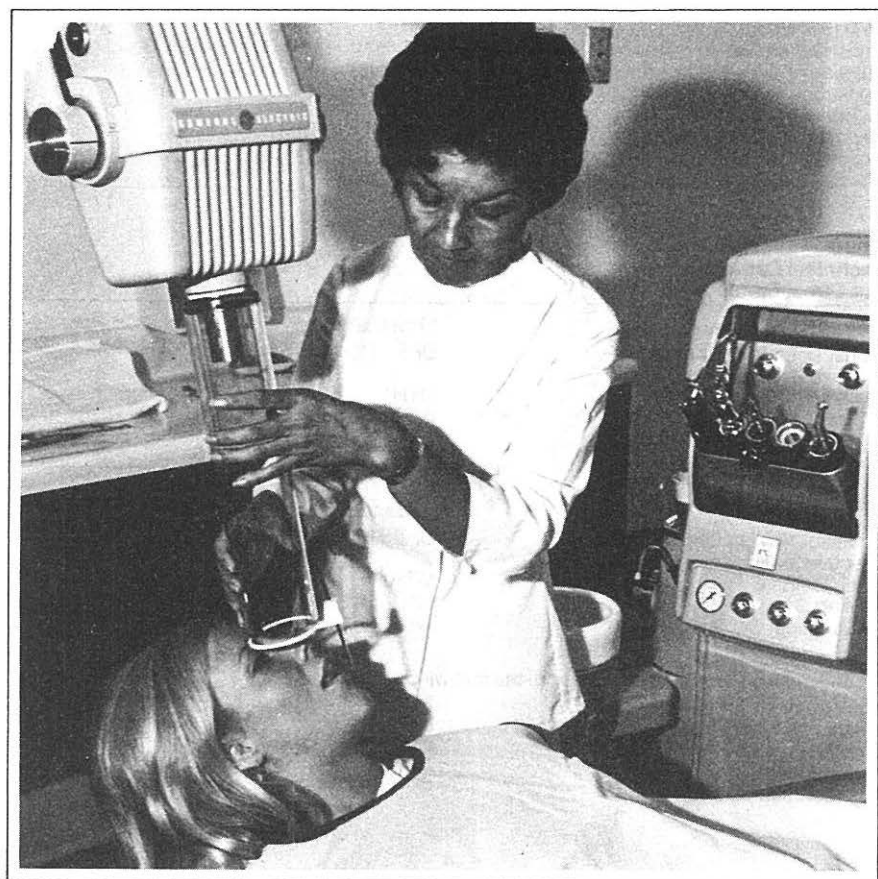
MAN 122

DLT 204

DLT 205

DLT 206

3	+	0	3
4	+	0	4
2	+	3	3
2	+	6	4
0	+	6	2
			<hr/> 16



Drafting Technology

Architectural Drafting: Students can select from a basic certificate program, an advanced certificate program and a two-year Associate of Applied Science degree program. The degree program provides experiences in drafting techniques, building construction systems and materials leading to employment in an architect's office and in construction oriented fields. Not designed for university transfer.

Electro-Mechanical Drafting: This two-year program, which leads to an Associate of Applied Science degree, provides an opportunity for development skills which prepare students for a career in drafting as found in several types of industry. Also available is a Mechanical/Electro-Mechanical drafting advanced certificate program.

Mechanical Drafting: This is a two-year Associate in Applied Science degree program which provides experiences in fundamental techniques and drafting practices for employment in a wide variety of drafting oriented industries.

Architectural Drafting Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Construction Drafting I-II	DFT 110, 120	8
Nine credit hours selected from the following:		9
Construction Determinants I-II	DFT 114-115	(6)
Building Utilities & Site Work	DFT 123	(3)
Construction Drafting III-IV	DFT 130, 140	(8)
Independent Study	DFT 149	(3)
Technical Drafting I	DFT 150	(4)
Construction Surveying	ENG 110	(3)
Blueprint Reading	GTC 99	(3)
		<hr/> 17

Architectural Drafting Technical Certificate For Direct Employment

Required Courses (30)	First Semester	Cr. Hrs.
Construction Drafting I	DFT 110	4
Elective Skill Course*		3
Math Elective	MTH	3
Writing I or	WRT 101	
Practical Communications	WRT 150	3
Elective		<hr/> 3
		16
	Second Semester	
Construction Drafting II	DFT 120	4
Elective Skill Courses*		6
Math Elective	MTH	3
Writing II or	WRT 102	
Technical Communications	WRT 154	3
		<hr/> 3
		16
*Elective Courses to be selected from the following:		
Construction Determinants I-II	DFT 114-115	(6)
Building Utilities & Site Work	DFT 123	(3)
Construction Drafting III-IV	DFT 130, 140	(8)
Independent Study	DFT 149	(3)
Construction Surveying	ENG 110	(3)

Architectural Drafting
Associate of Applied Science Degree
For Direct Employment

Required Courses	First Semester	Cr. Hrs.
Construction Drafting I	DFT 110	4
Construction Determinants I*	DFT 114	3
Math Elective**	MTH	3
Writing I or Practical Communications	WRT 101	
	WRT 150	3
Art or Design Elective	ART or DES	3
Physical Activity Elective	PED	1
		<hr/> 17
	Second Semester	
Construction Drafting II	DFT 120	4
Construction Determinants II*	DFT 115	3
Math Elective**	MTH	3
Writing II or Technical Communications	WRT 102	
	WRT 154	3
Art or Design Elective	ART or DES	3
Physical Activity Elective	PED	1
		<hr/> 17
	Third Semester	
Construction Drafting III	DFT 130	4
Building Utilities and Site Work	DFT 123	3
Life, Physical or Social Science Elective		3
Math Elective**	MTH	3
Electives		3
		<hr/> 16
	Fourth Semester	
Construction Drafting IV	DFT 140	4
Construction Surveying or Elementary Surveying***	ENG 110	
	ENG 130	3
Life, Physical or Social Science Elective		3
Business and Professional Communications	SPE 120	3
Electives		2
		<hr/> 15

*DFT 115 may be taken before DFT 114.

**Students completing MTH 150 and MTH 155 may use 3 credits of MTH elective as general electives.

***ENG 130 prerequisites: MTH 150 and MTH 155 or MTH 160.

Life, Physical, or Social Science Electives:

Introductory Chemistry I, II	CHM 101, 102
General Chemistry I, II	CHM 120, 121
Earth Sciences	ESC 101, 102, 103, 115, 120, 121
Life Sciences	LSC 22, 103, 104, 150, 151
Physics	PHY 101, 102, 112, 121, 122
Anthropology	ANT
Psychology	PSY 101, 102
Sociology	SOC

Suggested Electives:

Art History	ART
Art Studio Courses	ART
Computer Science	CSC
Design	DES
Light Weight Structure Design	DES 151
Literature	LIT
Technical Drafting	DFT 150
Engineering Graphics	ENG 120
How to Study	EXP 99

Fire Science	FSC
General Technology	GTC
Introduction to Western Civilization I, II	HIS 101, 102
Humanities	HUM 110, 111
Introduction to Philosophy	PHI 101, 102
Introduction to Logic	PHI 120
Speech	SPE
Welding	WLD
Technical Communications	WRT 154, 254

**Mechanical/Electro-Mechanical Drafting
Technical Certificate
For Direct Employment**

Required Courses (32)	First Semester	Cr. Hrs.
Technical Drafting I	DFT 150	4
Elective skill course*		3
Math Elective	MTH	3
Writing I or Practical Communications	WRT 101	
Elective	WRT 150	3
		<hr/> 3
		16
	Second Semester	
Technical Drafting II	DFT 151	4
Elective skill courses*		6
Math Elective	MTH	3
Writing II or Technical Communications	WRT 102	
	WRT 154	3
		<hr/> 3
		16

*Elective skill courses to be selected from the following:

Technical Drafting III	DFT 152	(4)
Tool Design	DFT 153	(4)
Electronic Drafting	DFT 154	(4)
Electro-Mechanical Design	DFT 155	(4)

**Mechanical or
Electro-Mechanical Drafting
Associate of Applied Science Degree
For Direct Employment**

Required Courses (68-70)	First Semester	Cr. Hrs.
Technical Drafting I	DFT 150	4
Practical Communications or Writing I	WRT 150	
Introduction to Math	WRT 101	3
Manufacturing Processes I	MTH 60	3
Human Relations	MAC 240	3
	MAN 110	3
		<hr/> 3
		16
	Second Semester	
Technical Drafting II	DFT 151	4
Technical Communications or Writing II	WRT 154	
Technical Math I	WRT 102	3
Manufacturing Processes II	MTH 110	3
Introduction to Electronics	MAC 245	3
	ETR 1	4
		<hr/> 4
		17

Third Semester		
Technical Drafting III	DFT 152	4
Industrial Graphics	DES 111	3
Technical Physics I	PHY 101	3
Electronic Drafting	DFT 154	3
Humanities Electives or	HUM	
Machine Shop or	MAC	
Functional Design or	DES 150	
Industrial Functional Design	DES 250	3-4
Elective		3
		<hr/>
		19-20

Fourth Semester		
Tool Design (for Mechanical Drafting Option	DFT 153	
or Electro-Mechanical Design (for		
Electro-Mechanical Drafting Option)	DFT 155	4
Engineering Graphics	ENG 120	3
Introduction to Computers	CSC 100	3
Humanities Electives or	HUM	
Machine Shop or	MAC	
Functional Design or	DES 150	
Industrial Functional Design	DES 250	3-4
Elective		3
		<hr/>
		16-17

Humanities Electives:

ART 130-131
MUS 151
LIT 141-142
HUM 110-111
PHI 101-102
DRA 240-241

Drama

The drama program is comprised of a core curriculum and four options of study leading to an associate degree.

Drama Education: This option, which prepares students for transfer to four-year college studies leading to a Bachelor of Fine Arts in Drama Education, provides training in performing and other aspects of theatrical production. Students are encouraged to begin studies toward a teaching minor.

Drama Production: Students in this option, which prepares for transfer to four-year college studies leading to a Bachelor of Fine Arts in Drama (Production), receive extensive experience and training in performing and all other aspects of theatrical productions.

Drama Theory: Students receive some training in performing and other aspects of theatrical production, but the eventual focus is on drama as literature. This option prepares students to transfer to four-year college studies leading to a Bachelor of Arts with a major in drama theory in which upper division concentration is on literature as well as drama.

Applied Drama: This option provides opportunities to prepare for a variety of activities in theatrical situations, concentrating on application of skills in productions. Not intended for transfer.

Drama Core Curriculum For All Drama Options Suggested Sequence

Required Courses (39)	First Semester	Cr. Hrs.
Introduction to Acting I	DRA 105	3
Stagecraft I	DRA 120	3
Writing I	WRT 101	3
Social Science Elective		3
		<hr/> 12
	Second Semester	
Introduction to Acting II	DRA 106	3
Stagecraft II	DRA 121	3
Writing II	WRT 102	3
Social Science Elective		3
		<hr/> 12
	Third Semester	
Make-up	DRA 115	1
Theater History I	DRA 240	3
Humanities I*	HUM 110	4
		<hr/> 8
	Fourth Semester	
Theater History II	DRA 241	3
Humanities II*	HUM 111	4
		<hr/> 7

*The Humanities requirement may also be met by a minimum of 9 credit hours from among ART 130–131, MUS 151, LIT 141–142, or PHI 101–102.

The suggested sequence in the core is supplemented by a suggested sequence in the four degree programs—in order to equalize loads from semester to semester.

SUGGESTED ELECTIVES FOR ALL PROGRAM OPTIONS: DRA 201, Speech, Music, Art, Dance, Fencing, Literature—and in addition for Applied Arts in Theater Degree: Drafting, Welding or Electronics.

**Applied Drama
Associate of Arts Degree
For Transfer**

Required Courses (60–67)	First Semester	Cr. Hrs.
Core Curriculum—Drama		(39)
Voice and Articulation	SPE 115	2
Electives		1–3
		3–5
	Second Semester	
Oral Interpretation of Literature	SPE 136	3
Electives		0–2
		3–5
	Third Semester	
Intermediate Acting I	DRA 248	3
Electives		3–5
		6–8
	Fourth Semester	
Intermediate Acting II	DRA 249	3
Theater Practice	DRA 51	3
Electives		2–4
		8–10

**Drama Education Option
Associate of Arts Degree
For Transfer**

Required Courses (63–66)	First Semester	Cr. Hrs.
Core Curriculum—Drama		(39)
Electives		3–5
	Second Semester	
Teaching Minor		3
Electives		1–2
		4–5
	Third Semester	
Intermediate Acting I	DRA 248	3
Lab Science or Science for Teachers		4
		7
	Fourth Semester	
Intermediate Acting II	DRA 249	3
Lab Science or Science for Teachers		4
Teaching Minor		3
		10

**Drama Production Option
Associate of Arts Degree
For Transfer**

Required Courses (60–63)	First Semester	Cr. Hrs.
Core Curriculum—Drama		(39)
Voice and Articulation	SPE 115	2
Electives		1–3
		3–5
	Second Semester	
Oral Interpretation of Literature	SPE 136	3
Electives		1–2
		4–5

Intermediate Acting I
Laboratory Science

Third Semester

DRA 248

3

4

7

Fourth Semester

DRA 249

3

4

7

**Drama Theory Option
Associate of Arts Degree
For Transfer**

Required Courses (63)

Core Curriculum—Drama
Foreign Language

First Semester

Cr. Hrs.

(39)

4

Second Semester

4

Third Semester

4

4

8

Fourth Semester

4

4

8

Foreign Language

Foreign Language
Lab Science

Foreign Language
Lab Science

Early Childhood Education

Programs offered in Early Childhood Education include teacher aide/assistant, teacher-director, self-employment; transfer to a four-year institution; and personal development in child rearing practices.

Career preparation sections give students an opportunity to prepare themselves as Teacher/Directors and as Teacher Aide/Assistants in both pre-service and in-service programs. The in-service program for Teacher Aide/Assistant provides the student with the opportunity to receive certification as a Child Development Associate.

Certificates are awarded to those successfully completing the teacher aide/assistant program. The other programs lead to an Associate of Arts degree.

Transfer programs are arranged primarily for transfer to Arizona universities. Students, however, should consult the catalog of the institution to which they plan to transfer for the first two-year requirements. Programs also should be arranged with an advisor.

Transfer programs offer study in the following areas: Child Development and Family Relations; Early Childhood Education—Home Economics School; Early Childhood Education—College of Education and Elementary Education.

Teacher Aide/Assistant (Pre-Service Program)

Certificate

For Direct Employment

Required Courses (30)	First Semester	Cr. Hrs.
The Growing Years or	ECE 106	
Human Development or	ECE 107	
Child Development or	ECE 117	
Effective Parenthood	ECE 114	3
Literature for the Young Child	ECE 108	3
Math & Science for the Young Child	ECE 124	3
Pre-School Education	ECE 118	3
Elective		3
		15
	Second Semester	
Language Arts for the Young Child	ECE 110	3
Techniques for Teacher Aides	ECE 126	3
Music for the Young Child	ECE 112	3
ECE Practicum	ECE 240	3
Elective		3
		15

Teacher-Director (Pre-Service Program)

Associate of Arts Degree

For Direct Employment

Required Courses (60-67)	First Semester	Cr. Hrs.
Human Development or	ECE 107	
The Growing Years or	ECE 106	
Child Development	ECE 117	3
Pre-School Education	ECE 118	3
Math. & Science for the Young Child	ECE 124	3
General Education Electives*		6-8
		15-17
	Second Semester	
Understanding the Young Child or	ECE 116	3
Effective Parenthood	ECE 114	3
Literature for the Young Child	ECE 108	3
Techniques for Teacher Aides	ECE 126	3
Music for the Young Child	ECE 112	3
General Education Electives*		3-4
		15-17

Third Semester		
Techniques for the Special Child	ECE 111	3
Language Arts for the Young Child	ECE 110	3
ECE Practicum	ECE 240	3
Planning for Play	ECE 128	3
General Education Electives*		3-4
		<hr/> 15-16
Fourth Semester		
Supervision & Administration	ECE 120	3
Current Trends in Early Childhood Ed.	ECE 130	3
ECE Practicum	ECE 240	3
General Education Electives*		6-8
		<hr/> 15-17

*The General Education Electives should be selected from the following:

Writing	WRT	(3)
Math	MTH	(3)
Humanities	HUM	(3-4)
Music	MUS	(3)
Physical Education	PED	(3)
Art	ART	(3)
Language		(4)
Social Sciences		(3)
Nutrition or Foods for Children	FSN 114 or 124	(3)

Teacher Aide/Assistant (In-Service) Certificate for Direct Employment

Required Courses		Cr. Hrs.
Environmental Design for the Early Childhood Center	CDA 120	3
Planning the Early Childhood Program	CDA 121	4
Observing Young Children	CDA 122	2
The Family and Early Childhood Education	CDA 123	3
Enhancing Intellectual Development in the Early Childhood Setting I	CDA 124	3
Enhancing Intellectual Development in the Early Childhood Setting II	CDA 125	3
Enhancing Personality Development in the Early Childhood Setting	CDA 126	3
Creative Expression in the Early Childhood Setting	CDA 220	3
Enhancing Physical Development in the Early Childhood Setting	CDA 221	2
Meeting the Special Language and Cultural Needs of Children in Groups or	CDA 222	2
Crafts in the Early Childhood Setting	CDA 223	2
Management Functions in the Operation of the Early Childhood Center	CDA 224	2
		<hr/> 30

**Teacher-Director (In-Service Program)
Associate of Arts Degree
For Direct Employment**

Required Courses		Cr. Hrs.
Environmental Design for the Early Childhood Center	CDA 120	3
Planning for the Early Childhood Program	CDA 121	4
Observing Young Children	CDA 122	2
The Family and Early Childhood Education	CDA 123	3
Enhancing Intellectual Development in the Early Childhood Setting I	CDA 124	3
Enhancing Intellectual Development in the Early Childhood Setting II	CDA 125	3
Enhancing Personality Development in the Early Childhood Setting	CDA 126	3
Creative Expression in the Early Childhood Setting	CDA 220	3
Physical Development in the Early Childhood Setting	CDA 221	2
Meeting the Special Language and Cultural Needs of Children in Groups or Crafts in the Early Childhood Setting	CDA 222 CDA 223	2 2
Management Functions in the Operation of the Early Childhood Center	CDA 224	2
		<hr/> 30

Additional Required Courses

Child Development	ECE 117	3
Technique for the Special Child	ECE 111	3
Effective Parenthood	ECE 116	3
Foods for Children	FSN 114	3
Electives from below		18
		<hr/> 30

Writing
Humanities
Social Sciences
Psychology
History
Political Science
Sociology
Economics
Anthropology

**Child Development and Family Relations
Associate of Arts Degree
For Transfer to Home Economics School**

Persons planning to enter this field of Child Development and Family Relations can complete their first two years of study at Pima Community College. However, students should follow the first two-year requirements of the college or university to which they plan to transfer and consult with an advisor for appropriate course selection.

**Early Childhood Education
Associate of Arts Degree
For Transfer to Home Economics School**

Persons planning to enter this field of Early Childhood Education can complete their first two years of study at Pima Community College. However, students should follow the first two-year requirements of the college or university to which they plan to transfer and consult with an advisor for appropriate course selection.

Education

An Associate of Arts Degree is available for students planning to enter one of the fields of Education: Elementary, Early Childhood or Secondary (and, at the University of Arizona, Rehabilitation).

However, students should follow the first two years' requirements of the college or university to which they plan to transfer and consult with an advisor for appropriate course selection.

In addition to the above listed requirements, students majoring in Elementary or Early Childhood Education and who plan to receive an Associate of Arts degree in Pre-Education are required to take the following two courses:

ECE 118 Introduction to Education

ECE 126 Teaching Techniques



Electronics Technology

The Electronics Technology program offers many varied opportunities for the student through several certificate programs and two degree programs.

The certificate programs enable students looking for the shortest route to employment to specialize in certain areas. These credits may later be applied to degree programs if the student wishes either to return to, or continue with, his or her studies.

A two-year Associate of Applied Science degree program is available for students who do not anticipate transferring to a four-year technology program. Those who do plan to continue their studies at a four-year institution should enroll in the two-year Associate of Science degree program.

Extensive laboratory experiences are offered to reinforce classroom theory and develop skills in the use of basic test equipment such as multimeters, oscilloscopes and signal generators. The latest trainers and test equipment are available for use by students in advanced and specialized courses.

Students planning to enroll in an electronics program should consult with an electronics advisor so that a program can be set up to meet individual needs. Students also should plan their schedules to allow sufficient time for study—1 to 2 hours outside study for each hour of class time.

General Electronics* Basic Certificate For Direct Employment

Suggested Course Sequence		Cr. Hrs.
Electronics Math I or	MTH 115	
Algebra II	MTH 130	3
Fundamentals of Electronics	ETR 100	6
Electronics Math II or	MTH 125	
College Algebra	MTH 150	3
Electric Circuits/Systems I	ETR 105	6
Digital Electronics	ETR 110	3
		<hr/> 21

Television Repair* Basic Certificate For Direct Employment

Suggested Course Sequence		Cr. Hrs.
Fundamentals of Electronics	ETR 100	6
Electronics Math I or	MTH 115	
Algebra II	MTH 130	3
TV Repair I/Black & White	ETR 140	6
TV Repair/Color	ETR 145	6
Human Relations	MAN 110	3
		<hr/> 24

Consumer Electronics* Basic Certificate For Direct Employment

Suggested Course Sequence		Cr. Hrs.
TV Repair Program		24
Home Enter. Equipment Repair	ETR 150	6
		<hr/> 30

*Students with no prior electronics experience or having a weak math background should take Introduction to Electronics (ETR 1) and Algebra I (MTH 70 series) as program entry prerequisites.

**Communications, Consumer, Digital, Industrial
Electronics Technology
Technical Certificate
For Direct Employment**

Suggested Course Sequence (46-57)	First Semester	Cr. Hrs.
Electronics Math I or Algebra II	MTH 115	
Fundamentals of Electronics	MTH 130	3
Technical Drafting I	ETR 100	6
	DFT 150	3
		<hr/> 12
	Second Semester	
Electronics Math II or College Algebra	MTH 125	
Digital Electronics	MTH 150	3
Electronics Circuits/Systems I	ETR 110	3
Practical Communications or Writing I	ETR 105	6
	WRT 150	
	WRT 101	3
		<hr/> 15
	Third Semester	
Trigonometry (Not required for Industrial Option)	MTH 155	0-3
Technical Communications or Writing II	WRT 154	
Option 1*	WRT 102	3
		<hr/> 4-6
		7-12
	Fourth Semester	
Electronic Drafting	DFT 154	3
Human Relations or Technical Communications	MAN 110	
Option 2*	WRT 254	3
Option 3* (For Consumer Electronics Only)		6
		<hr/> 6
		12-18

*Students should choose appropriate courses from the four specialized options given.

Communications Electronics

Option 1 ETR 230 (6)
Option 2 ETR 235 (6)

Consumer Electronics

Option 1 ETR 140 (6)
Option 2 ETR 145 (6)
Option 3 ETR 150 (6)

Digital Electronics

Option 1 ETR 250 (4)
Option 2 ETR 255 (6)

Industrial Electronics

Option 1 ETR 274 (6)
Option 2 ETR 276 (6)

Note: F.C.C. License (ETR 290) should be considered by all communications majors. Students with no prior experience or having a weak math background should take Introduction to Electronics (ETR 1) and Algebra I (MTH 70 series) as program entry prerequisites.

**Communications, Consumer, Digital, Industrial
Electronics Technology
Associate of Applied Science Degree
For Direct Employment**

Suggested Course Sequence (60-69)	First Semester	Cr. Hrs.
Electronics Math I or Algebra II	MTH 115	
Fundamentals of Electronics	MTH 130	3
Technical Drafting I	ETR 100	6
Practical Communications or WRT 1	DFT 150	3
Electives	WRT 150	
	WRT 101	3
		<hr/> 0-3
		15-18

Second Semester		
Electronics Math II or	MTH 125	
College Algebra	MTH 150	3
Electronics Circuits/Systems I	ETR 105	6
Digital Electronics	ETR 110	3
Technical Communications or	WRT 154	
Writing II	WRT 102	3
Electives		0-3
		<hr/> 15-18
Third Semester		
Trigonometry	MTH 155**	3
Human Relations or	MAN 110	
Technical Communications	WRT 254	3
Technical Physics I	PHY 101	3
Elective		3
Option I*		4-6
		<hr/> 16-18
Fourth Semester		
Electronic Drafting	DFT 154	3
Technical Physics II	PHY 102	3
Elective		0-3
Option 2*		6
Option 3* (For Consumer Electronics Only)		6
		<hr/> 12-15

*Students should choose appropriate course options from the four specializations given.

**Not required for industrial option, take an elective for the credit hours.

Communications Electronics Options

Option 1	ETR 230	(6)
Option 2	ETR 235	(6)

Consumer Electronics Options

Option 1	ETR 140	(6)
Option 2	ETR 145	(6)
Option 3	ETR 150	(6)

Digital Electronics Options

Option 1	ETR 250	(4)
Option 2	ETR 255	(6)

Industrial Electronics Options

Option 1	ETR 274	(6)
Option 2	ETR 276	(6)

Note: F.C.C. License (ETR 290) should be considered by all communications majors students with no prior experience or having a weak mathematics background should take Introduction to Electronics (ETR 1) and Algebra I (MTH 70 series) as program entry prerequisites.

Communications, Consumer, Digital, Industrial Electronics Technology Associate of Science Degree For Transfer

Suggested Course Sequence (61-75)

	First Semester	Cr. Hrs.
Algebra II	MTH 130	3
Fundamentals of Electronics	ETR 100	6
Technical Drafting I	DFT 150	3
Writing I	WRT 101	3
Electives*		0-3
		<hr/> 15-18
	Second Semester	
College Algebra	MTH 150	3
Digital Electronics	ETR 110	3
Electronics Circuits/Systems I	ETR 105	6
Writing II	WRT 102	3
Electives*		0-3
		<hr/> 15-18

		Third Semester	
Technical Communications		WTR 254	3
Trigonometry		MTH 155***	3
Electives*			6-7
Option 1**			4-6
			<hr/>
			16-19
		Fourth Semester	
Electronic Drafting		DFT 154	3
Electives*			3-6
Option 2**			6
Option 3** (For Consumer Electronics Only)			6
			<hr/>
			15-18

*Students must have 8 credits in any combination of humanities, literature, speech or philosophy and 9 credits—with at least 6 in one subject—from history, psychology, anthropology, economics or political science.

**Students should choose appropriate course options from the four specializations given.

***Not required for industrial option, take an elective for the credit hours.

Communication Electronics

Options

Option 1 ETR 230 (6)

Option 2 ETR 235 (6)

Consumer Electronics

Options

Option 1 ETR 140 (6)

Option 2 ETR 145 (6)

Option 3 ETR 150 (6)

Digital Electronics

Options

Option 1 ETR 250 (4)

Option 2 ETR 255 (6)

Industrial Electronics

Options

Option 1 ETR 274 (6)

Option 2 ETR 276 (6)

Note: F.C.C. License (ETR 290) should be considered by all communications majors. Students with no prior experience or having a weak math background should take Introduction to Electronics (ETR 1) and Algebra 1 (MTH 70 series) as program entry prerequisites.

Electronics Digital Technology

The Digital Electronics Program provides the student with training and experience on microprocessors, minicomputers, digital communications equipment, and computer peripherals. Students will work with industrial quality equipment to learn both programming and maintenance of digital equipment.

The rapidly expanding local digital electronics industry has created a high demand for trained digital electronics technicians as well as the opportunity for students to work at cooperative education work stations while attending school.

Associate of Applied Science Degree

First Year	First Semester	Cr. Hrs.
Electronic Math I	MTH 115	3
Fundamentals of Electronics	ETR 100	6
Writing 101	WRT 101	3
Measurements & Const.	ETR 120	2
Elective		3
		<hr/> 17
	Second Semester	
Electronic Math II	MTH 125	3
Electronic Circuits	ETR 105	6
Writing 102	WRT 102	3
Digital Elective	ETR 110	3
		<hr/> 15
Second Year	First Semester	
Electronic Analysis	ETR 253	3
Digital Systems	ETR 255	6
Digital Development I	ETR 250	4
Elective		3
		<hr/> 16
	Second Semester	
Digital Development II	ETR 251	6
Computer Periph.	ETR 257	4
Microprocessors	ETR 256	6
Optional ElectiveCOOP		
		<hr/> 16
Electives		
Fortran	CSC 140	
COOP	ETR 296, 297, 299	
Drafting	DFT 150, 154	
Advanced Circuits	ETR 230	
Psychology	PSY 100, 102	
Humanities	HUM 110-111	
Sociology	SOC 100	
History	HIS 101-102	

Students who may transfer to a four-year college or university should take the math sequence MTH 70, MTH 130, MTH 150, MTH 155.

Writing 150, 154 may be substituted for Writing 101, 102.

Emergency Medical Technology

This program covers all knowledge and performance objectives currently considered within the realm of the Emergency Medical Technician-Ambulance (EMT-A). The course, 114 clock hours in length, is a strenuous, fast moving introduction to the field of pre-hospital emergency medical care. Great emphasis will be placed on basic mechanisms of emergency disease conditions, recognition and treatment of emergency medical and traumatic conditions as well as an introduction to the operational aspects of emergency medicine in the pre-hospital setting.

Students successfully completing the knowledge and performance objectives of the program will be issued a certificate of course completion from Pima Community College. Current Arizona Department of Health Services Regulations allow those graduates who present a need for State EMT Certification (usually an affiliation with a pre-hospital provider of emergency services) to take the Arizona EMT Registry Exam upon completion of the training program at Pima Community College. Also, graduates with sufficient work experience may be eligible to take the national certifying exam through the National Registry of Emergency Medical Technicians.

Acceptance into the Program:

- Completion of college and EMT acceptance requirements.
- Personal interviews with program coordinator.

Note: Priority in admission will be given to those individuals affiliated with agencies providing pre-hospital emergency services (ambulance services, fire departments, search and rescue organizations), hospital and clinics, and others presenting a documented need for training (students in other allied health programs, fire sciences).

General Requirements:

- Total credit: 5 credit hours.
- Work in residence: minimum 5 credit hours of major (EMT) courses to be completed in residence.

Restrictions:

None.

Minimal Grade Achievement:

"C" level.

Certificate

For Direct Employment

					Lec.	Lab	Cr. Hrs.	
Emergency Medical Technology	EMT	51			4	+	2	5

Engineering

Students completing the two-year program should be able to transfer to a four-year college or university for further studies. By selecting appropriate options, the student can specialize in one of the following branches of engineering, aerospace, agricultural, chemical, civil, electrical, geological, mechanical, metallurgical or mining.

Associate of Science Degree For Transfer

Suggested Courses (64-71)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Anal. Geometry & Calculus I	MTH 180	3
General Chemistry I	CHM 120	4
Physical Education Elective	PED	1
Option 1		3
Option 2		3-4
		<hr/> 17-18
	Second Semester	
Writing II	WRT 102	3
Anal. Geometry & Calculus II	MTH 185	3
General Chemistry II	CHM 121	3-4
Introductory Physics I*	PHY 131	4
Physical Education Elective	PED	1
Option 3		3-4
		<hr/> 17-19
	Third Semester	
Anal. Geometry & Calculus III	MTH 215	4
Eng. Mechanics-Statics	ENG 210	3
Introductory Physics II**	PHY 132	4
Option 4		3-4
		<hr/> 14-15
	Fourth Semester	
Linear Algebra & Differential Equations	MTH 220	4
Mechanics of Materials***	ENG 230	3
Option 5		3-4
Option 6		3-4
Option 7		3-4
		<hr/> 16-19
Aerospace or Mechanical Engineering		Cr. Hrs.
Option 1 Fortran IV Programming	CSC 140	3
Option 2 Engineering Graphics	ENG 120	3
Option 3 Elective		3-4
Option 4 Elective		3-4
Option 5 Elective		3-4
Option 6 Eng. Mechanics-Dynamics	ENG 220	3
Option 7 Numerical Anal. for Eng.	ENG 250	3
Agricultural Engineering		
Option 1 Fortran IV Programming	CSC 140	3
Option 2 Engineering Graphics	ENG 120	3
Option 3 Elective		3-4
Option 4 Elective		3-4
Option 5 Elective		3-4
Option 6 Organismic Biology I	LSC 205	4
Option 7 Numerical Anal. for Eng.	ENG 250	3

Chemical Engineering

Option 1	Fortran IV Programming	CSC 140	3
Option 2	Elective		3-4
Option 3	Elective		3-4
Option 4	Organic Chemistry I	CHM 240	4
Option 5	Elective		3-4
Option 6	Organic Chemistry II	CHM 241	4
Option 7	Elective		3-4

Civil Engineering

Option 1	Fortran IV Programming	CSC 140	3
Option 2	Engineering Graphics	ENG 120	3
Option 3	Elementary Surveying	ENG 130	3
Option 4	Elective		3-4
Option 5	Elective		3-4
Option 6	Eng. Mechanics-Dynamics	ENG 220	3
Option 7	Numerical Anal. for Eng.	ENG 250	3

Electrical Engineering

Option 1	Fundamentals of Electronics	ETR 100	6
Option 2	None		0
Option 3	Fortran IV Programming	CSC 140	3
Option 4	Intro. to Digital Systems	ENG 240	3
Option 5	Elementary Circuit Theory	ENG 245	3
Option 6	Elective		3-4
Option 7	Numerical Anal. for Eng.	ENG 250	3

*Take PHY 210 instead of PHY 131

**Take PHY 216 instead of PHY 132

***Take PHY 221 instead of ENG 230

Geological or Mining Engineering

Option 1	Fortran IV Programming	CSC 140	3
Option 2	Engineering Graphics	ENG 120	3
Option 3	Elementary Surveying	ENG 130	3
Option 4	Elective		3-4
Option 5	Elective		3-4
Option 6	Elective		3-4
Option 7	Elective		3-4

Metallurgical Engineering

Option 1	Fortran IV Programming	CSC 140	3
Option 2	Elective		3-4
Option 3	Elective		3-4
Option 4	Elective		3-4
Option 5	Elective		3-4
Option 6	Elective		3-4
Option 7	Elective		3-4

All electives listed under the specialization in engineering are in the humanities or social science areas.

If four or more electives are taken, at least two should be in the humanities and at least two in the social sciences.

If three electives are taken, two should be in the humanities and one in the social sciences, or vice versa.

Electives in humanities and the social sciences that are acceptable in the engineering program are listed below:

Humanities Electives

All the courses numbered 100 or higher in humanities, literature, philosophy and religion. ART 130, ART 131, ART 230, ART 231, DRA 240, DRA 241, SPA 220, SPE 136.

Social Science Electives

All the courses numbered 100 or higher in anthropology, economics, history, political science, psychology and sociology. ESC 101, ECS 102, ESC 103, SPE 110, SPE 130.

English as a Second Language (ESL)

This is a special program designed for the bilingual and foreign student to develop proficiency in oral and written American English. Students will be placed in the program according to language test results.

Program Courses:			Cr. Hrs.
Elementary Grammatical Patterns	ESL	50	6
Intermediate Grammatical Patterns (Level 1)	ESL	51	3
Intermediate Grammatical Patterns (Level 2)	ESL	52	3
Intermediate Reading and Writing (Level 1)	ESL	53	3
Intermediate Reading and Writing (Level 2)	ESL	54	3
Advanced Grammatical Patterns	ESL	55	3
Advanced Reading	ESL	56	3
Advanced Writing	ESL	57	3
Composition I*	ESL	58	3
Composition II*	ESL	59	3

*These courses may be transferable as Writing 101 and 102 on approval by the Writing and ESL faculty.

Exploratory or General Studies

A general or exploratory studies program, meeting broad individual interests, may be arranged through conferences with a counselor or faculty advisor. Courses can be selected from a variety of subject areas and an Associate of Arts degree will be granted upon completion of 60 credit hours of study.

Students may transfer to another educational program at any time, subject to specific course requirements of that program.

Students should be aware that if an Associate of Arts degree is obtained in general or exploratory studies, and they intend to transfer to a four-year institution, it may be necessary to take additional courses to satisfy the first two years of a four-year curriculum leading to a Baccalaureate degree.



Finance

The two-year Associate of Applied Science degree program was designed in affiliation with the various financial institutions in the Tucson area. It is flexible so as to allow for a variety of specialty options within the finance industry. These options currently include banking, savings and loan associations and credit unions. Basic and advanced certificate programs also are offered in savings and loan, and in credit union.

Banking Associate of Applied Science Degree For Direct Employment

Required Courses (60)		Cr. Hrs.
Principle of Bank Operations	FIN 102	3
Introduction to Macroeconomics	ECO 101	3
Math (based on placement exam)	MTH	3
Elective*		3
Banking Elective**		3
		15
Second Semester		
Principle of Accounting I	ACC 101	3
Human Relations	MAN 110	3
Writing (based on placement exam, 100 level or above)	WRT	3
Elective*		3
Banking Elective**		3
		15
Third Semester		
Money and Banking	FIN 210	3
Principle of Accounting II	ACC 102	3
Supervision	MAN 122	3
Business Law I	BUS 200	3
Elective*		3
		15
Fourth Semester		
Bank Management	FIN 203	3
Electives*		6
Banking Electives**		6
		15

*Electives selected from humanities, psychology, sociology, philosophy, anthropology or history.

**Banking electives may be selected from FIN prefix courses and other courses which relate to the banking industry.

Credit Union Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Credit Union Basics	FIN 131	3
Credit Union Management	FIN 132	3
Installment Credit	FIN 208	3
Elective (select any course from two-year program)		3
		12

**Credit Union
Advanced Certificate
For Direct Employment**

Required Courses		Cr. Hrs.
Basic Certificate Requirements		12
Introduction to Macroeconomics	ECO 101	3
Principle of Accounting I	ACC 101	3
Credit Union Operations	FIN 231	3
Credit Union Advanced Management	FIN 232	3
Electives*		6
		<hr/> 30

*Select any courses from Credit Union Associate of Applied Science Degree program.

**Credit Union
Associate of Applied Science Degree
For Direct Employment**

Required Courses (60)		Cr. Hrs.
First Semester		
Credit Union Basics	FIN 131	3
Installment Credit	FIN 208	3
Human Relations	MAN 110	3
Math (based on placement exam)	MTH	3
Writing (based on placement exam, 100 level or above)	WRT	3
		<hr/> 15
Second Semester		
Credit Union Management	FIN 132	3
Supervision	MAN 122	3
Introduction to Macroeconomics	ECO 101	3
Elective*		3
Elective**		3
		<hr/> 15
Third Semester		
Credit Union Operations	FIN 231	3
Principle of Accounting I	ACC 101	3
Introduction to Microeconomics	ECO 100	3
Business Law I	BUS 200	3
Elective*	BUS 200	3
		<hr/> 15
Fourth Semester		
Credit Union Advanced Management	FIN 232	3
Advertising	MKT 125	3
Principle of Accounting II***	ACC 102	3
Elective*		3
Elective**		3
		<hr/> 15

*Select from history, humanities, psychology, sociology, philosophy, political science or anthropology.

**Select from FIN prefix courses and other courses which relate to the credit union industry.

***May select a 200 level RLS or FIN course as an option.

**Savings and Loan
Basic Certificate
For Direct Employment**

Required Courses		Cr. Hrs.
Savings and Loan Business Operation	FIN 101	3
Insurance of Savings Accounts	FIN 104	3
Teller Operations	FIN 106	3
Human Relations	MAN 110	3
		<hr/> 12

**Savings and Loan
Advanced Certificate
For Direct Employment**

Required Courses		Cr. Hrs.
Basic Certificate Requirements		12
Financial Institutions	FIN 212	3
Supervision	MAN 122	3
Introduction to Political Science	POL 100	3
Real Estate Principles	RLS 101	3
Business & Professional Communication	SPE 120	3
Elective*		3
		<hr/> 30

*Select from history, humanities, anthropology, psychology, sociology, philosophy or political science.

**Savings and Loan
Associate of Applied Science Degree
For Direct Employment**

Required Courses (60)		Cr. Hrs.
First Semester		
Savings & Loan Business Operations	FIN 101	3
Insurance of Savings Accounts	FIN 104	3
Human Relations	MAN 110	3
Business & Professional Communication	SPE 120	3
Math (based on placement exam)	MTH	3
		<hr/> 15
Second Semester		
Principle of Accounting I	ACC 101	3
Introduction to Microeconomics	ECO 100	3
Supervision	MAN 122	3
Real Estate Principles	RLS 101	3
Writing (based on placement exam, 100 level or above)	WRT	3
		<hr/> 15
Third Semester		
Principle of Accounting II	ACC 102	3
Introduction to Macroeconomics	ECO 101	3
Electives*		6
Elective**		3
		<hr/> 15
Fourth Semester		
Financial Institutions	FIN 212	3
Electives*		6
Electives**		6
		<hr/> 15

*Select from history, humanities, psychology, sociology, philosophy, political science or anthropology.

**Select from FIN prefix courses and other courses which relate to the savings and loan industry.

Fire Science

The Fire Science Program provides in-service training in the occupation of firefighting. The program deals with the technical, managerial, para-medical and human aspect of fire-fighting tactics, and the application of modern methods of fire prevention and suppression.

Slightly more than half of the 63 credit hours required for an Associate Degree in Fire Science are in courses relating directly to the field. These courses prepare the student to become fully qualified for service in municipal, rural, governmental, industrial or private fire departments, and other agencies in the fire protection field; and to move toward managerial and command positions.

The other half of the program consists of required related general education courses, and choices from a wide range of electives which enable the student to develop supportive skills and generally broaden his educational base.

Associate of Applied Science Degree For Direct Employment

Required Courses		Cr. Hrs.
Introduction to Fire Science	FSC 51	3
Fundamentals of Fire Prevention	FSC 52	3
Hazardous Materials I-II	FSC 53, 61	6
Advanced Fire Prevention	FSC 54	3
Hydraulics & Fire Suppression	FSC 62	3
Fire Apparatus & Equipment	FSC 63	3
Fire Protection Systems	FSC 64	3
Building Construction for Fire Protection	FSC 65	3
Fire Suppression Tactics	FSC 66	3
Rescue Practices and First Aid	FSC 67	3
		<hr/> 33
General Education Requirements:		
Writing I	WRT 101	3
Technical Communications	WRT 154	3
Algebra I (or more advanced)	MTH 70	3
Technical Physics I	PHY 101	3
Electives**		15
		<hr/> 60

**Electives to be selected from:

Automotive Technology
Business
Computer Science
Cooperative Education
Emergency Medical Technology
Engineering
Federal Lands and Fire Control (REC 78)
History
Humanities
Literature
Mathematics
Philosophy
Physics
Political Science
Psychology
Recreation
Sociology
Spanish
Speech
Writing

Note: Other course electives may be taken. For more information, student should contact an advisor.

Geology

Associate of Science Degree For Transfer

Suggested Courses (64–66)

Writing I
Introductory Geology I
College Algebra
Social Science Elective*
Physical Education

First Semester

WRT 101
ESC 120
MTH 150

PED

Cr. Hrs.

3
4
3
3
1

14

Second Semester

Writing II
Introductory Geology II
Trigonometry
General Chemistry I
Social Science Elective*

WRT 102
ESC 121
MTH 155
CHM 120

3
4
3
4
4

18

Third Semester

Engineering Graphics
General Chemistry II
Introductory Physics I
Humanities Elective*
Physical Education

ENG 120
CHM 121
PHY 121

3
4
4

3–4

PED

1

15–16

Fourth Semester

Elementary Surveying
Introductory Physics II
Fortran IV Programming
Humanities Elective*
Earth Science

ENG 130
PHY 122
CSC 140

3
4
3

3–4

ESC

4

17–18

*For course electives in humanities and social sciences consult the catalog of the college or university you plan to enter.

Note: The courses suggested meet University of Arizona requirements for the first two years of a Bachelor of Science degree in Geology in Liberal Arts. However, students should consult the college to which they plan to transfer for requirements.

A foreign language may be required in lieu of, or in addition to, courses listed.

Graphic Technology

The Graphic Technology program offers two options: a basic certificate, requiring 24 credit hours; and an Associate of Applied Science degree, requiring 60 credit hours. The first two semesters of the total program serve as a core curriculum of course work in the areas of graphic technology, advertising art and liberal arts. During the third and fourth semester, students specialize in graphic technology as well as participate in cooperative education work experience. This program is designed for direct employment.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Introduction to Business	BUS 100	3
Graphic Technology I-II	GRA 101-102	6
Offset Photography—Strip & Platemaking	GRA 104	3
Binding & Finishing	GRA 103	3
Offset Presswork	GRA 202	3
Advanced Offset Presswork	GRA 222	3
Math (based on placement exam)		3
		<hr/> 24

Associate of Applied Science Degree For Direct Employment

Required Courses (60)	First Semester	Cr. Hrs.
Introduction to Business	BUS 100	3
Practical Communications	WRT 150	3
Graphic Technology I	GRA 101	3
Prod. Technology & Proc. I	ADA 111	3
Binding and Finishing	GRA 103	3
		<hr/> 15
	Second Semester	
Math (based on placement test)	MTH	3
Business & Professional Communication	SPE 120	3
Graphic Technology II	GRA 102	3
Prod. Technology & Proc. II	ADA 211	3
Offset Photography—Stripping & Platemaking	GRA 104	3
		<hr/> 15
	Third Semester	
Color Theory & Practice	GRA 201	3
Offset Presswork	GRA 202	3
Estimation Printing & Materials	GRA 203	3
Math (second course in sequence)	MTH	3
Co-op Education Training	GRA 299	3
		<hr/> 15
	Fourth Semester	
Advanced Offset Presswork	GRA 222	3
Advanced Stripping & Platemaking	GRA 221	3
Human Relations in Business	MAN 110	3
Offset Operations & Maintenance	GRA 232	3
Co-op Education Training	GRA 299	3
		<hr/> 15

Home Economics

The Home Economics area offers students a broad exposure to family and consumer sciences and specific opportunities in the following areas:

- Career preparation
- Transfer to a four-year institution
- Personal development for home and family living

Career or Occupational Programs:

Career preparation sections are designed to give students an opportunity to prepare themselves in:

- Alteration Specialist
- Professional Seamstress
- Fashion Design

Alteration Specialist Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Clothing Construction 1	FDC 111	3
History of Fashion	FDC 122	3
Alteration & Repair	FDC 142	3
Alteration & Designing	FDC 112	3
Clothing Selection	FDC 131	3
Textiles	FDC 126	3
Suggested Electives:		
Human Relations or	MAN 110	
Small Business Management	MAN 124	3
Electives (See advisor)		9
		<hr/> 30

Professional Seamstress Associate of Applied Science Degree For Direct Employment

Required Courses		Cr. Hrs.
Alteration Specialist Program		30
Clothing Construction II-III	FDC 211, 212	6
Applied Dress Design	FDC 121	3
Psychology of Dress	FDC 132	3
Today's World	HEC 137	3
Co-op Training	HEC 299	6
Electives (See advisor)		9
		<hr/> 60

Fashion Design Associate of Arts Degree For Direct Employment

Required Courses (63)		Cr. Hrs.
Clothing Construction I-II	FDC 111, 211	6
Alteration & Designing	FDC 112	3
History of Fashion	FDC 122	3
Applied Dress Design	FDC 121	3
Fashion Design I-II	FDC 141, 241	6
Clothing Selection	FDC 131	3
Textiles	FDC 126	3
Psychology of Dress	FDC 132	3
Today's World	HEC 137	3
Co-op Training	HEC 299	6
		<hr/> 39

General Education Requirements:

Basic Design	ART 100	3
Retailing	MKT 139	3
Advertising	MKT 125	3
Human Relations	MAN 110	3
Writing I or Practical Communications	WRT 101	3
Electives*	WRT 150	9
		<hr/> 24

***Suggested Electives**

Stagecraft/Production I	DRA 120	(3)
Drawing I	ART 110	(3)
Fundamentals of Chemistry I	CHM 110	(4)
Introduction to Psychology I	PSY 100	(3)
Human Development	ECE 107	(3)

Home Economics Transfer Programs:

Transfer programs should be arranged on an individual basis with an advisor so that a student can complete the first two-year requirements at Pima and then complete the last two year's coursework at the college to which the student plans to transfer.

The programs offered by universities may include study in the following areas:

- Child Development and Family Relations
- Early Childhood Education
- Human Nutrition and Dietetics
- Consumer Service in Food
- Food Service Management
- Clothing and Textiles
- Fashion Merchandising
- Home Economics Education
- Interior Design*
- General Home Economics
- Home Economics and Journalism
- Home Economics Extension Education

*Advising for Interior Design majors who are planning to transfer is actually done by advisors in the Fine, Applied and Communicative Arts Area at the West Campus.

Hospitality

This program develops personnel for public service within the hospitality industry—hotels-motels, clubs, food and beverage operations plus meeting the many special needs of tourists. The growth of the Tucson area provides many job opportunities within this rapidly growing industry.

Dual objectives are pursued under the program: 1) updating the skills of those already in the field; and 2) providing beginning skills for persons planning to enter the field. The curriculum, offered through the college's Downtown Campus, is in response to a request of the Southern Arizona hospitality industry. Its continuing interest and on-going cooperation in program content contributes greatly to the effectiveness of the studies. The industry also provides many of the instructors.

Course content provides theory and practice, information on economy and profits, and puts stress on customer satisfaction.

Fast Food Industry Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Human Relations	MAN 110	3
Introductory Mathematics	MTH 60	3
Restaurant Sanitation and Operations	FFI 101	3
Restaurants Cash Register Operations & Inventory Control	FFI 102	3
Cooperative Education Training	HMM 199	3
		<hr/> 15

Food and Beverage Service Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Introduction to Hotel-Motel Management	HMM 100	3
Food & Beverage Management	HMM 104	3
Food Study	FSN 113	3
Professional Food Services	FSN 214	3
Co-op Education Training	HMM 199	3
		<hr/> 15

Hotel-Motel Operations Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Introduction to Hotel-Motel Management	HMM 100	3
Front Office Procedures	HMM 101	3
Hotel-Motel Accounting	HMM 102	3
Supervisory Housekeeping	HMM 103	3
Co-op Education Training	HMM 199	3
		<hr/> 15

Hotel-Motel Operations
Associate of Applied Science Degree
For Direct Employment

Required Courses (63)		Cr. Hrs.
Introduction to Hotel-Motel Management	HMM 100	3
Front Office Procedures	HMM 101	3
Writing I or	WRT 101	
Practical Communications	WRT 150	3
Math (determined by placement test)	MTM	3
Co-op Education (in operations)	HMM 199	3
		<hr/> 15
Second Semester		
Hotel-Motel Accounting	HMM 102	3
Supervisory Housekeeping	HMM 103	3
Food & Beverage Management	HMM 104	3
Human Relations in Business	MAN 110	3
Hotel-Motel Operations	HMM 110	3
Co-op Education (in food & beverage)	HMM 199	3
		<hr/> 18
Third Semester		
Advanced Hotel-Motel Accounting or	HMM 202	
Principles of Accounting II	ACC 102	3
Professional Food Services	FSN 214	3
Marketing of Hospitality Services	HMM 203	3
Elective*		3
Co-op Education (in general management)	HMM 299	3
		<hr/> 15
Fourth Semester		
Hotel-Motel Financial Management	HMM 204	3
Labor-Management Relations	MAN 278	3
Electives**		6
Co-op Education (in general management)	HMM 299	3
		<hr/> 15

*Select from humanities, psychology, sociology or philosophy.

**Select from science, humanities, psychology, sociology or philosophy.

Housekeeping-Executive
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Executive Housekeeping I	HSK 150	3
Executive Housekeeping II	HSK 151	3
Co-op Education	HMM 199	3
Elective*		3
		<hr/> 12

Housekeeping-Executive
Advanced Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Basic Certificate Requirements		12
Introduction to Microeconomics	ECO 100	3
Supervision	MAN 122	3
Human Relations	MAN 110	3
Co-op Education	HMM 199 or 299	3
Electives*		6
		<hr/> 30

*Electives to be chosen from writing 150, psychology 100, management 280.

**Travel Agent
Basic Certificate
For Direct Employment**

Required Courses		Cr. Hrs.
Human Relations	MAN 110	3
Introduction to Psychology	PSY 100	3
Cooperative Education Training	HMM 199	3
Principles of Travel-Tourism Industry	TVL 101	3
Travel Agent Methods and Procedures	TVL 102	3
		<hr/> 15

**Travel-Tour Agency Manager
Advanced Certificate
For Direct Employment**

Required Courses		Cr. Hrs.
Basic Certificate Requirements		15
Advanced Hotel-Motel Accounting	HMM 202	3
Marketing of Hospitality Services	HMM 203	3
Cooperative Education Training	HMM 199 or 299	3
Travel-Tour Agency Management	TVL 201	3
Current Issues and Problems in Travel-Tourism	TVL 202	3
		<hr/> 30

Interpreter Training Program

The total program consists of four semesters of classes totaling a minimum of 64–66 credit hours to complete the Associate Applied Science Degree in Interpreter Training. The program includes a minimum of 55 to 57 credit hours of campus lecture, 4 credit hours of laboratory study, and 5 credit hours of practicum work in the community.

To facilitate program offerings, modules are designed that may be short courses or in-service training for persons needing basic communications skills with the deaf. Other offerings will be available for students wanting to further develop a specialization area in interpreting.

Acceptance into the Program

In addition to meeting general requirements for admission into Pima County Community College, the applicant must:

1. Demonstrate a reading competency at the tenth (10th) grade level.
2. Provide evidence of successfully completing (B or better) a basic sign language course equivalent to SLG 101.
3. Complete an Interpreter Training Program Application.

General Requirements

Total Credit: 63–65 credit hours

Work in Residence: 31 credit hours in major course work

Restrictions: Transfer sign language courses limited to eight (8) credit hours.

Interpreter Training Program Associate of Applied Science Degree For Direct Employment

Required Courses	First Semester	Cr. Hrs.
The Community and the Exceptional Person	SLG 100	3
Manual Communication I	SLG 101	4
Spelling	REA 71	1
Reading 100 Series	REA 100	4
Humanities Elective*		3–4
		15–16
	Second Semester	
Manual Communications II	SLG 102	4
History of Deafness	SLG 120	3
Introduction to Psychology	PSY 100	3
Introduction to Oral Communication	SPE 102	3
Humanities Elective		3–4
		16–17
	Third Semester	
Psycho-Social Aspects of Deafness	SLG 150	3
Principles of Etiology and Audiology	SLG 180	3
Manual Communications III	SLG 201	4
Interpreting I	SLG 220	3
Elective**		3
		16
	Fourth Semester	
Manual Communications IV	SLG 202	4
Interpreting II	SLG 250	3
Practicum	SLG 290	3
Elective		6
		16
	Total	64–66

*Humanities Electives: Art History; Humanities I, II; Literature; Music; Philosophy.

**Students should contact program advisor for appropriate electives.

Journalism

A two-year Liberal arts program for students planning to enter Journalism should include courses in news writing and mass communications. Experience in producing a publication is offered through a laboratory course, JRN 57. Students planning to transfer to a four-year institution should follow the first two-year study requirements of the college or university to which they plan to transfer.

Associate of Arts Degree For Transfer

Required Courses (68)

Expl. Mass Media
Writing I
Foreign Language
Social Science Elective
Elective*

First Semester

JRN 110
WRT 101

Cr. Hrs.

3
3
4
3
3

16

Second Semester

Basic Reporting
Writing II
Foreign Language
Humanities I
Social Science Elective

JRN 101
WRT 102

HUM 110

3
3
4
4
3

17

Third Semester

Advanced Reporting
Foreign Language
Science or Math Elective
Social Science Elective
Elective**

JRN 201

3
4
4
3
3

17

Fourth Semester

Social Science Elective
Foreign Language
Science or Math Elective
Humanities II
Elective**

HUM 111

3
4
4
4
3

18

*Journalism majors are expected to be able to type and OED 111 is suggested.

**Suggested electives:

Advertising	MKT 125	(3)
Photography I	ART 140	(3)
Public Relations	GEB 84	(3)

Liberal Arts and Sciences

Behavioral or social sciences, astronomy, biology, chemistry, communicative arts, geography, geology, languages, literature, mathematics, philosophy, physics, and many other subjects are included in the transfer program for Liberal Arts or Science majors.

Students are urged to see an advisor in order to select courses required by the college or university to which they plan to transfer, as well as to determine specific recommendations for subject areas in which they may be interested in majoring. Liberal Arts students should have their proposed major and minor subjects selected upon transfer to the four-year institutions of their choice.

After successful completion of this program, students may then be eligible to transfer into upper class levels at their selected college or university.

Liberal Arts or Sciences (General) Associate of Arts or Sciences Degree For Transfer

Required Courses		Cr. Hrs.
Writing I–II	WRT 101, 102	6
Humanities Electives*(1)		8–10
Foreign Language*(2)		16
Behavioral or Social Sciences*(3)		9
Mathematics and/or Science*(4)		8–9
Transferable Electives		13–15
		<hr/> 60–65

*(1) Choose any of the following options:

- | | | |
|---|---------------|----|
| (a) Humanities I and II | (HUM110, 111) | 8 |
| (b) Humanities I or II and
6 units from Option C. | | 10 |
| (c) Not less than 9 units from the
following 3 groups, with
no more than 6 units from
any one group: | | |

1. DRA 240, 241; LIT 241, 242, 261, 265, 270, 271, 272

2. PHI 101, 102, 130

3. ART 130, 131, 132; MUS 151, 201, 202

*(2) Fulfilled by either 4 semesters (2 years) of any *one* foreign language or 2 semesters (1 year) *each* of 2 different foreign languages. Bilingual or international students should consult an advisor concerning this requirement.

*(3) Fulfilled by 9 units in behavioral or social sciences, with 6 units in *one* subject and 3 units in a *second* subject, chosen from the following: anthropology, cultural geography, economics, history, political science, psychology or sociology.

*(4) Fulfilled by 1 of the following: 2 semesters (8 units) of a single lab science, 8 units of college-level math; 9 units of non-lab science or a combination of MTH 130 or above and/or science courses. For more information, see an advisor.

Library Technology

This program prepares students for entry positions as library technicians in school libraries, public libraries, college and special libraries. It is for persons who wish to enter the library field at a level below the fifth year professional. Graduates are eligible for employment in the public services or the technical services department of any library. Options include an advanced certificate program requiring 29 credit hours and an Associate of Applied Science degree program requiring 64 credit hours.

Advanced Certificate For Direct Employment

Required Courses (29)	First Semester	Cr. Hrs.
Library Resources	LMT 50	3
Library Public Services	LMT 52	3
Typing II	OED 112	3
Data Entry	CSC 110	3
Instructional Media Technology I	MET 81	3
		<hr/> 15
	Second Semester	
Library Technology Services	LMT 51	4
Word Processing	OED 122	4
Implications of Media Technology	MET 84	3
Elective*		3
		<hr/> 14

*Elective to be chosen with the consent of an advisor.

Associate of Applied Science Degree For Direct Employment

Suggested Semester Sequence (65)	First Semester	Cr. Hrs.
Library Public Services	LMT 52	3
Writing I	WRT 101	3
Typing II	OED 112	3
Humanities Elective	HUM	4
Social or Physics Science Elective		3
		<hr/> 16
	Second Semester	
Writing II	WRT 102	3
Data Entry	CSC 110	3
Library Resources	LMT 50	3
Introduction to Computers	CSC 100	3
Word Processing	OED 122	4
		<hr/> 16
	Third Semester	
Library Technical Services	LMT 51	4
Instructional Media Technology I	MET 81	3
Office Procedures	OED 257	4
Humanities Elective	HUM	4
Social Science Elective		3
		<hr/> 18
	Fourth Semester	
Co-op Library Training	LMT 299	3
Implications of Media Technology	MET 84	3
Science Elective*		3
Social Science Elective*		3
Elective*		3
		<hr/> 15

*Electives to be chosen with the consent of an advisor.

Life Sciences

Life Sciences at Pima Community College offers an Associate of Science Degree for transfer in the following areas:

Biology
Pre-Agriculture
Pre-Dental
Pre-Medical
Pre-Medical Technology and Microbiology
Pre-Pharmacy
Pre-Veterinary

Students planning to enter these fields should have completed two years of high school algebra, one year of high school geometry and preferably one year of trigonometry. Students entering with deficiencies in these courses should complete them at Pima Community College.

All students entering a Life Science program at Pima Community College should take the Math Placement Test in the Math-Science Alternative Learning Center. The student should arrange to meet with a Life Science faculty advisor to plan a program. Advising for students, who wish to pursue preliminary course work for Pre-Dental Hygiene, Pre-Forestry, Pre-Physical Therapy and Pre-Optometry studies, is also available, although a formal program is not outlined herewith.

Programs of study and requirements for the various majors follow:

PRE-MEDICAL, PRE-DENTAL, PRE-VETERINARY AND BIOLOGY MAJORS

Minimum requirements for admission to a medical school have been established by the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association. Requirements for admission to a dental school have been established by the Council on Dental Education of the American Dental Association.

While the minimum requirements are less than a bachelor's degree, most successful applicants enter medical school with a bachelor's degree. The medical associations strongly urge students to acquire a broad, general education in all areas, including the social or behavioral sciences and humanities, as well as studies in the sciences.

Career options open to graduate veterinarians include private practice in large and small animal clinics, college instruction, veterinary practice in the Agricultural Research Service, U.S. Department of Agriculture, livestock management and veterinary microbiology and pathology. Minimum standards for admission to veterinary schools have been established by the American Veterinary Medical Association. Generally, before students are considered for admission to a veterinary school, they must have completed not less than two pre-professional years of college credit (60 semester credits).

The following courses, which lead to an Associate of Science Degree, are recommended for students who plan to transfer to a four-year institution to complete their pre-professional course requirements for medicine, dentistry, veterinary medicine or a B.S. degree in the biological sciences. Students are urged to contact the school of their choice for specific requirements.

Biology Pre-Dental Pre-Medical Pre-Veterinary

Associate of Science Degree For Transfer

Suggested Courses (63-65)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Analytic Geometry & Calculus I* or Topics in Calculus	MTH 180	
Humanities Elective***	MTH 175	3
General Chemistry I		3-4
Social Sciences Elective	CHM 120	4
		3
		16-17
	Second Semester	
Writing II	WRT 102	3
Analytic Geometry & Calculus II or Introduction to Statistics*	MTH 185	
General Chemistry II	MTH 210	3
Organismic Biology I	CHM 121	4
Social Sciences Elective	LSC 205	4
		3
		17
	Third Semester	
Humanities Elective***		3-4
Analytic Geometry & Calculus III* or Physics** or Foreign Language	MTH 215	
Organismic Biology II		4
Organic Chemistry I	LSC 206	4
	CHM 240	4
		15-16
	Fourth Semester	
General Genetics	LSC 210	4
Organic Chemistry II	CHM 241	4
Physics** or Foreign Language		4
Transfer Elective		3
		15

*Students may choose Mathematics sequence 180, 185, 215, or 175, 210.

**Students may choose Physics 121, 122 or Physics 131, 132 or a Foreign Language.

***The Baccalaureate requirement is 8 units in humanities field; i.e., philosophy, humanities or literature.

Students in Pre-Dental, Pre-Medical and Pre-Veterinary programs should consult the catalog of the school to which they plan to apply. Students are advised that a maximum of 72 hours community college credit may be transferred to universities.

Pre-Agriculture

Modern Agriculture is a basic and complex industry with a wide range of career opportunities. In many departments, these opportunities overlap. The curricula in agriculture are designed to meet the needs of students by combining a broad knowledge of agriculture with elements of general education. By successfully completing the Pre-Agricultural program, a student might elect to pursue one of the following fields of study at the university level:

Agricultural Communications
Agricultural Economics
Agricultural Education
Agri-Mechanics & Irrigation
Agronomy
Animal Health Science
Animal Sciences
*Dietetics
Entomology
Fisheries Science
*Food Science

General Agriculture
Horticulture
Landscape Architecture
Natural Resources Recreation
*Nutritional Science
Plant Pathology
Plant Science
Range Management
Soil & Water Science
Watershed Management
Wildlife Ecology

*Check other sections of catalog for further information on these areas.

Associate of Science Degree For Transfer

Suggested Courses (66-68)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
College Algebra	MTH 150	3
General Chemistry I	CHM 120	4
Introduction Geology I	ESC 120	4
Transfer Elective		3
		<hr/> 17
	Second Semester	
Writing II	WRT 102	3
General Chemistry II	CHM 121	4
Introduction to Oral Communication	SPE 102	3
Trigonometry	MTH 155	3
Transfer Elective		3
		<hr/> 16
	Third Semester	
Organismic Biology I	LSC 205	4
Introduction Physics I	PHY 121	4
Technical Communications	WRT 254	3
Humanities Elective*		3-4
Social Sciences Elective		3
		<hr/> 17-18
	Fourth Semester	
Organismic Biology II or Botany I	LSC 206	4
Humanities Elective*	LSC 220	3-4
Social Sciences Elective		3
Introduction to Microeconomics	ECO 100	3
Transfer Elective		3
		<hr/> 16-17

*The baccalaureate requirement is 8 units in humanities field; i.e., philosophy, humanities or literature.

Pre-Medical Technology and Microbiology

Students wishing to pursue a course of study leading toward a medical technology degree and/or certification should consider the following courses. However, specific requirements of the institution granting the degree may vary and students should check the catalog of the institution to which they plan to transfer. A background of high school algebra, biology and chemistry is recommended.

Associate of Science Degree For Transfer

Suggested Courses (64–66)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
College Algebra	MTH 150	3
General Chemistry I	CHM 120	4
Social Science Elective		3
Microbiology I	LSC 207	4
		<hr/> 17
	Second Semester	
Writing II	WRT 102	3
Trigonometry	MTH 155	3
General Chemistry II	CHM 121	4
Human Anatomy/Physiology I*	LSC 120	4
Social Sciences or Humanities Elective**		
		<hr/> 3–4
		17–18
	Third Semester	
Introduction to Statistics	MTH 210	3
Organic Chemistry I	CHM 240	4
Introduction Physics I	PHY 121	4
Human Anatomy/Physiology II*	LSC 121	4
		<hr/> 15
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Introduction Physics II	PHY 122	4
Social Science Elective		3
Humanities Elective		4
		<hr/> 15

*Not required for microbiology majors. Micro majors might substitute a foreign language for LSC 120, 121.

**The Baccalaureate requirement is 8 units in the humanities field; i.e., philosophy, humanities of literature.

Pre-Pharmacy

As one of the basic health professions, pharmacy offers a wide range of career choices to the student interested in the delivery of health care and services. Among career choices open to the graduate pharmacist are: community pharmacy (retail: independent chain pharmacies), institutional pharmacy (hospital), the Public Health Service, Indian Health Service, armed forces, manufacturing, quality control, etc. The graduate pharmacist, additionally, is prepared to pursue further study leading to advanced degrees in the pharmaceutical and related biomedical sciences.

A five-year curriculum became mandatory for the pharmacy degree in 1960. Colleges of pharmacy vary in the requirement of one or two years of pre-pharmacy before admission. The student is urged to contact the college of his choice for specific pre-pharmacy requirements.

Associate of Science Degree For Transfer

Suggested Courses (64-66)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Topics in Calculus	MTH 175	3
General Chemistry I	CHM 120	4
Microbiology I	LSC 207	4
Humanities Elective*		3-4
		<hr/> 17-18
	Second Semester	
Writing II	WRT 102	3
Introduction to Statistics	MTH 210	3
General Chemistry II	CHM 121	4
Microbiology II	LSC 208	4
Humanities Elective*		3-4
		<hr/> 17-18
	Third Semester	
Organic Chemistry I	CHM 240	4
Introduction Physics I	PHY 121	4
Introduction to Microeconomics**	ECO 100	(3)
Human Anatomy/Physiology I	LSC 120	4
Social Science Elective		3
		<hr/> 15
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Introduction Physics II	PHY 122	4
Introduction to Macroeconomics**	ECO 101	(3)
Human Anatomy/Physiology II	LSC 121	4
Social Science Elective		3
		<hr/> 15

*The baccalaureate requirement is 8 units in humanities field; i.e., philosophy, humanities or literature.

**Micro- and macroeconomics courses are highly recommended for transfer to the baccalaureate degree program in pharmacy; however, these courses are not required for Associate of Science Degree.

Note: Transfer students may substitute two semesters of general biology for anatomy and physiology I. Pharmacy is a five-year program.

Machine Tool Technology

The Machine Tool Technology program offers a broad coverage of techniques used in metals manufacturing including machine shop, welding and sheet metal. It is accompanied by supporting courses in manufacturing processes, quality control, metallurgy and drafting. A two-year degree program is offered as well as basic certificate and technical certificate programs.

A person majoring in a Machine Tool Technology curriculum may find Cooperative Education offers an ideal way of gaining additional skills-application experience while attending classes. Consult a Cooperative Education teacher-coordinator for details.

Machine Shop Fundamentals Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Machine Shop I-II	MAC 110, 120	8
Technical Math I-II	MTH 110, 120	6
Technical Drafting I	DFT 150	3
Basic Metallurgy	MAC 130	3
		<hr/> 20

Machinist's Standard Certificate Technical Certificate For Direct Employment

Required Courses		Cr. Hrs.
Machine Shop I-II	MAC 110, 120	8
Jig & Fixture Design I-II	MAC 210, 220	8
Quality Control	MAC 230	3
Technical Math I-II	MTH 110, 120	6
Basic Metallurgy	MAC 130	3
Physical Metallurgy	MAC 135	3
Technical Communications	WRT 154	3
Human Relations	MAN 110	3
Technical Drafting I-II	DFT 150-151	6
		<hr/> 43

Machine Tool Technology Associate of Applied Science Degree For Direct Employment

Required Courses (67)	First Semester	Cr. Hrs.
Machine Shop I	MAC 110	4
Technical Math I	MTH 110	3
Practical Communications	WRT 150	3
Basic Metallurgy	MAC 130	3
Technical Drafting I	DFT 150	3
		<hr/> 16
	Second Semester	
Machine Shop II	MAC 120	4
Technical Math II	MTH 120	3
Technical Communications	WRT 154	3
Physical Metallurgy	MAC 135	3
Technical Drafting II	DFT 151	3
		<hr/> 16

Jig & Fixture Design I
 Quality Control
 Human Relations
 Technical Physics I
 Manufacturing Processes I
 Humanities, Psychology, Sociology, or
 Philosophy Elective

Third Semester

MAC 210	4
MAC 230	3
MAN 110	3
PHY 101	3
MAC 240	3
	<hr/> 3
	19

Jig & Fixture Design II
 Introduction to Numerical Control
 Combination Welding
 Technical Physics II
 Manufacturing Processes II

Fourth Semester

MAC 220	4
MAC 250	3
WLD 110	3
PHY 102	3
MAC 245	3
	<hr/> 3
	16



Management

The Management curriculum is offered in recognition of the requirements of modern business for the development of more effective skills in the supervisory area. This program emphasizes the behavioral and quantitative aspects of the planning, organizing, coordinating, analyzing and evaluating that is inherent in the administrative process.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Principles of Accounting I	ACC 101	3
Mathematics of Business	BUS 51	3
Business Law I	BUS 200	3
Human Relations	MAN 110	3
Supervision	MAN 122	3
		<hr/> 15

Advanced Certificate For Direct Employment

Required Courses		Cr. Hrs.
Basic Certificate Requirements		15
Principles of Accounting II	ACC 102	3
Business Law II	BUS 201	3
Introduction to Business	BUS 100	3
Personnel Management	MAN 276	3
Labor/Management Relations	MAN 278	3
		<hr/> 30

Associate of Applied Science Degree For Direct Employment

Required Courses (60-65)	First Semester	Cr. Hrs.
Principle of Accounting I	ACC 101	3
Introduction to Business	BUS 100	3
Mathematics of Business	BUS 51	3
Human Relations	MAN 110	3
Business English	OED 154	3
		<hr/> 15
	Second Semester	
Principle of Accounting II	ACC 102	3
Supervision	MAN 122	3
Small Business Management	MAN 124	3
General Education Elective*		3-4
Speech Elective	SPE 110 or 120	3
		<hr/> 15-16
	Third Semester	
Accounting Elective	ACC 201, 203, 204	3
Business Law I	BUS 200	3
Personnel Management	MAN 276	3
Introduction to Microeconomics	ECO 100	3
General Education Elective*		3-4
		<hr/> 15-16
	Fourth Semester	
Business Elective**		3-4
Labor/Management Relations	MAN 278	3
Business Organization & Management	MAN 280	3
General Education Electives*		6-8
		<hr/> 15-18

***General Education Requirements**

Select four of the following courses or other available general education courses with the consent and written approval of the subject area coordinator or faculty advisor.

MTH 70 or MTH 150

REA 100 series

WRT 101 and/or WRT 154

POL 110 and/or POL 111

SPE 120

SPA 50 and/or SPA 55

PHI 101 and/or PHI 102 and/or PHI 120

PSY 100 and/or PSY 101

SOC 100 and/or SOC 101

HUM 110 and/or HUM 111

ECO 101

****Business Elective**

Students may take any courses offered in the subject areas of the Business Division (ACC, CSC, BUS, MAN, MKT, or OED) that are not required in their degree program. It is suggested that OED 259, Business Communications, be taken.

Marketing

The Marketing curriculum offers students a variety of courses to develop an understanding of how business serves people through new product development, physical distribution, communication and consumer research. Students may begin preparation for careers in advertising, consumer affairs, industrial marketing, inter-national marketing, marketing research, product management, retail management, sales management and small business marketing.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Principles of Accounting I	ACC 101	3
Mathematics of Business	BUS 51	3
Business Law I	BUS 200	3
Marketing	MKT 111	3
Salesmanship	MKT 113	3
		<hr/> 15

Advanced Certificate For Direct Employment

Required Courses		Cr. Hrs.
Basic Certificate Requirements		15
Principles of Accounting II	ACC 102	3
Business Law II	BUS 201	3
Introduction to Business	BUS 100	3
Advertising	MKT 125	3
Consumer Behavior	MKT 141	3
		<hr/> 30

Associate of Applied Science Degree For Direct Employment

Required Courses (60-65)	First Semester	Cr. Hrs.
Principles of Accounting I	ACC 101	3
Introduction to Business	BUS 100	3
Mathematics of Business	BUS 51	3
Human Relations	MAN 110	3
Business English	OED 154	3
		<hr/> 15
	Second Semester	
Principles of Accounting II	ACC 102	3
	MKT*	3
	MKT*	3
General Education Elective**		3-4
Speech Elective	SPE 110 or 120	3
		<hr/> 15-16
	Third Semester	
Accounting Elective	ACC 201, 203, 204	3
Business Law I	BUS 200	3
	MKT*	3
Introduction to Microeconomics	ECO 100	3
General Education Elective**		3-4
		<hr/> 15-16

Fourth Semester

Business Elective***

MKT*
MKT*

3-4
3
3

General Education Elective**

3-4

General Education Elective*

3-4

15-18

Cr. Hrs.

*Required Marketing Courses:

Select five of the following:

Marketing	MKT 111	3
Salesmanship	MKT 113	3
Advertising	MKT 125	3
Advertising Layout & Design	MKT 127	3
Retailing	MKT 139	3
Consumer Behavior	MKT 141	3

These courses should be taken in numerical sequence, if possible.

**General Education Requirements:

Select four of the following courses or other available general education courses with the consent and written approval of the subject area coordinator.

MTH 70 or MTH 150
 REA 100 series
 WRT 101 and/or WRT 154
 POL 110 and/or POL 111
 SPE 120
 SPA 50 and/or SPA 55
 PHI 101 and/or PHI 102 and/or PHI 120
 PSY 100 and/or PSY 101
 SOC 100 and/or SOC 101
 HUM 110 and/or HUM 111
 ECO 101

**Business Elective

Students may take any courses offered in the subject areas of the Business Division (ACC, CSC, BUS, MAN, MKT, or OED) that are not required in their degree program. It is suggested that OED 259, Business Communications, be taken.

Mathematics

Associate of Arts Degree For Transfer

Suggested Courses (64–66)

Writing I
Anal. Geometry & Calculus I
Finite Mathematics
Elementary French I
(or German)
Social Science Elective*

First Semester

WRT 101
MTH 180
MTH 170
FRE 110
GER 110

Cr. Hrs.

3
3
3
4
3

16

Second Semester

Writing II
Anal. Geometry & Calculus II
Fortran IV Programming
Elementary French II
(or German)
Social Science Elective*

WRT 102
MTH 185
CSC 140
FRE 111
GER 111

3
3
3
4
3

16

Third Semester

Anal. Geometry & Calculus III
Introductory Physics I
Intermediate French I
(or German)
Humanities Elective*
Physical Education

MTH 215
PHY 131
FRE 210
GER 210

4
4
4
4

3–4

1

16–17

Fourth Semester

Linear Algebra & Diff. Equations
Introductory Physics II
Intermediate French II
(or German)
Humanities Elective*
Physical Education

MTH 220
PHY 132
FRE 211
GER 211

4
4
4
4

3–4

1

16–17

*For course electives in humanities and social sciences consult the catalog of the college or university you plan to enter.

Note: The courses suggested above meet University of Arizona requirements for the first two years of a Bachelor of Arts or Science degree.

Media Technology

Upon completing the two-year Instructional Media Technology program, students will have the necessary basic knowledge and skills for entry level in the following areas: communigraphics, reprographics, telecommunications, photography and audiovisual equipment repair and maintenance.

The program prepares students for para-professional roles in educational institutions, public institutions, business and industry. Each of the areas is presented through discussion of modern techniques, and extensive laboratory experience in designing and producing instructional materials as well as in the operation of a media production center or instructional media services center.

Both a basic certificate program, requiring 21 credit hours of work and an Associate in Applied Sciences degree program, requiring 64 credit hours, are offered.

Basic Certificate For Direct Employment

Suggested Semester Sequence (21)	First Semester	Cr. Hrs.
Library Public Services	LMT 52	3
Communigraphics I	MET 50	3
Media Technology I	MET 81	3
		<hr/> 9
	Second Semester	
Cinematography I	MET 53	3
Repair and Maintenance	MET 70	3
Implications of Media Technology	MET 84	3
Telecomm-TV Productions	MET 90	3
		<hr/> 12

Associate of Applied Science Degree For Direct Employment

Suggested Semester Sequence (64)	First Semester	Cr. Hrs.
Communigraphics I	MET 50	3
Media Technology I	MET 81	3
Writing I	WRT 101	3
Library Public Services	LMT 52	3
Science or Math		4
		<hr/> 16
	Second Semester	
Cinematography I	MET 53	3
Media Technology II	MET 82	3
Writing II	WRT 102	3
Humanities I	HUM 110	4
Social Science Elective		3
		<hr/> 16
	Third Semester	
Repair and Maintenance	MET 70	3
Telecomm-TV Productions	MET 90	3
Introduction to Computers	CSC 100	3
Science or Math		4
Co-op Training	MET 299	3
		<hr/> 16
	Fourth Semester	
Implications of Media Technology	MET 84	3
Co-op Training	MET 299	3
Art	ART	3
Electives		7
		<hr/> 16

Military Science

The primary objective of the Army and the Air Force ROTC programs is to furnish leaders suitable for commissioning as Reserve Officers. Intermediate objectives are to develop self-discipline, integrity, a sense of responsibility, and a capacity for thoughtful and decisive leadership.

ROTC is offered to full-time students at Pima Community College by the Military Science Department at the University of Arizona. Although students enroll in their ROTC classes at Pima, classes are conducted at the Old Main Building on the University of Arizona campus.

First year students should take classes in the semester sequence listed. Second year students who have not taken these classes in their first year may, however, combine the first and third semesters of ROTC in the fall, and the second and fourth semesters in the spring, thereby gaining in one year the 8 units required to enter the Advanced ROTC program upon transfer to the University of Arizona.

Students are under no military obligation during their first two years in the program.

A uniform deposit fee of \$25 will be paid with student's normal registration fees. The fee receipt will be taken to the ROTC supply clerk, Bear Down Gym, University of Arizona campus, so that a uniform can be issued.

Upon return of the uniform to the supply clerk at the end of the semester, the student fee receipt will be signed to the fact that the uniform has been returned, and the student's \$25 will be refunded. Refunds are at the West Campus only.

Students who complete the first two years of the program and continue their ROTC training receive a tax-free subsistence pay of \$100 per month during their junior and senior years at four-year institutions.

Air Force ROTC

Required Courses (8)	First Semester	Cr. Hrs.
The U.S. Air Force Today I	MLA 101	2
	Second Semester	
The U.S. Air Force Today II	MLA 102	2
	Third Semester	
U.S. Air Force History I	MLA 203	2
	Fourth Semester	
U.A. Air Force History II	MLA 204	2
		<hr/> 8

Army ROTC

Required Courses (8)	First Semester	Cr. Hrs.
Introduction to ROTC	MSC 101	2
	Second Semester	
Defense Established in National Security	MSC 102	2
	Third Semester	
American Military History	MSC 203	2
	Fourth Semester	
Military Map Reading & Tactics	MSC 204	2
		<hr/> 8

Music

The suggested program provides the first two years of music experiences generally required by higher institutions of learning. Arizona's three universities also require an examination of all students who transfer applied work. Because of different or specific degree requirements, it is necessary that each student consult with the music faculty for advice on specific programs. Students also should follow the first two-year study requirements of the four-year institution to which they plan to transfer.

Associate of Arts Degree For Transfer

Required Courses (72)	First Semester	Cr. Hrs.
Music Theory I	MUS 103	4
Band or	MUS 120	
Chorale	MUS 130	2
Applied Music/Private Instruction	MUS 145	2
Piano Class I	MUS 141	1
Writing I	WRT 101	3
Electives*		4
		<hr/> 16
	Second Semester	
Music Theory II	MUS 204	4
Band or	MUS 120	
Chorale	MUS 130	2
Applied Music/Private Instruction	MUS 145	2
Piano Class II	MUS 142	1
Writing II	WRT 102	3
Electives*		7
		<hr/> 19
	Third Semester	
Music Theory III	MUS 205	4
History and Literature of Music I	MUS 201	3
Band or	MUS 120	
Chorale	MUS 130	2
Applied Music/Private Instruction	MUS 145	2
Piano III	MUS 143	1
Electives*		7
		<hr/> 19
	Fourth Semester	
Music Theory IV	MUS 206	4
History and Literature of Music II	MUS 202	3
Band or	MUS 120	
Chorale	MUS 130	2
Applied Music/Private Instruction	MUS 145	2
Piano IV	MUS 144	1
Electives*		6
		<hr/> 18

*Electives should be selected to meet general education and/or departmental requirements at four-year institutions to which transfer is planned. Faculty advisors must approve electives in the program of study.

Nursing Careers

Nursing career programs prepare graduates to practice as a Nursing Assistant, Practical Nurse and Associate Degree Nurse. Both the Nursing Assistant and Practical Nurse curriculum are designed to permit students, if they later wish, to move upward in their nursing career.

Nursing Assistant

This program provides the basic health care skills students can utilize as nursing assistants in hospitals, long-term facilities and other health care agencies. Graduates are prepared to give patient care under the direct supervision of licensed health personnel. Students who satisfactorily complete this curriculum will receive a Nursing Assistant Basic Certificate.

Nursing assistant training also is provided under the Allied Health Services program.

Acceptance into Program:

- Completion of Pima Community College acceptance requirements.
- Completion of a special application for the Nursing Assistant program.
- Completion of placement examinations in mathematics and reading comprehension. (Note—Applicants must place at the eighth grade level or better in reading comprehension.)
- Interview by the campus Allied Health Service Review Committee or a committee member.
- A physical examination, to include T.B. screening, is required upon acceptance into the program.

General Requirements:

- Total credits: 12 semester hours
- Successful completion of all academic and clinical program requirements.

Basic Certificate For Direct Employment

Required Courses		Lec.	Lab	Cr. Hrs.
Principle of Anatomy & Physiology	LSC 102	3	+ 3	4
Introduction to Health Care	HCA 154	3	+ 0	3
Skills, Allied Health Services	HCA 150	2	+ 9	5
				<hr/> 12

Note: Nursing assistant graduates interested in preparing for the practical nurse or Associate Degree nursing programs should consult with their nursing advisor.

Associate Degree Nursing

This curriculum provides the theoretical and practical preparation to qualify graduates to give quality nursing care and to offer this care to the health consumer with some degree of independence under the supervision of a more experienced registered nurse. The program consists of four semesters on campus and in affiliated hospitals and community agencies. Nursing courses must be taken in sequence as each course builds upon the previous one. Required general education courses in each semester must be completed before or taken concurrently with the nursing courses. Students satisfactorily completing this curriculum will graduate with an Associate of Science degree in nursing and will be eligible to take the Arizona State Board Registered Nurse Licensing examination.

Acceptance into Program:

- Completion of associate degree nursing application packet.
- Completion of high school chemistry or one semester of college chemistry within the past five years.
- Completion of a reading proficiency examination.
- Approval by selections committee.
- Transfer of credits for nursing courses to be approved according to college policy.

General Requirements:

- Total credit: 66 credit hours.
- 35 credit hours of major courses (Nursing).
- 31 credit hours of general education courses.

Minimal Grade Achievement:

"C" level in all courses.

Associate of Science Degree For Direct Employment

Required Courses (66)	First Semester	Lec.	Lab	Cr. Hrs.	
Anatomy/Physiology I	LSC 120	3	+	3	4
Introduction to Health Care	HCA 154	3	+	0	3
Writing I	WRT 101	3	+	0	3
*A.D. Nursing I	NRS 170	4	+	12	8
					18
	Second Semester				
Anatomy/Physiology II	LSC 121	3	+	3	4
Introduction to Psychology I	PSY 100	3	+	0	3
*A.D. Nursing II	NRS 172	4	+	15	9
					16
	Third Semester				
Writing II	WRT 102	3	+	0	3
Microbiology I	LSC 207	3	+	4	4
A. D. Nursing III	NRS 280	4	+	15	9
					16
	Fourth Semester				
A.D. Nursing IV	NRS 282	4	+	15	9
Introduction to Sociology	SOC 100	3	+	0	3
Elective					4
					16

*Self/Pace Nursing courses are offered for NRS 170 & 172. Admission is determined by nursing program policy.

Pre-Baccalaureate Nursing For Transfer**

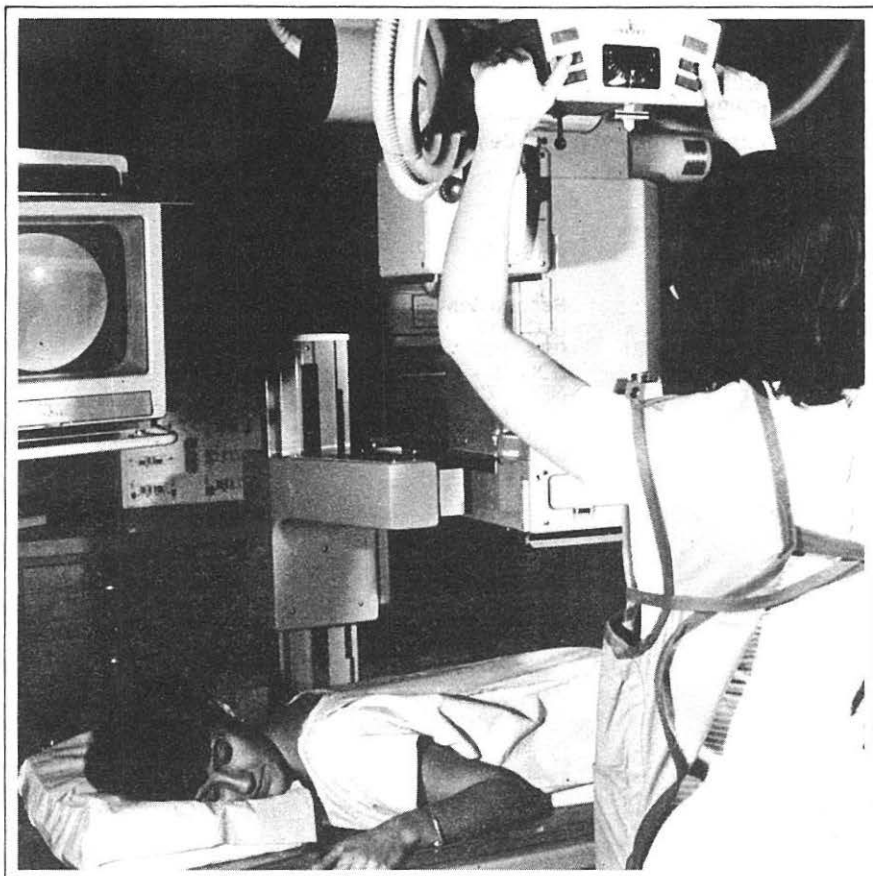
Required Courses (66)

Fund. Chemistry I-II	CHM 110-111	8
Anatomy/Physiology I-II	LSC 120-121	8
Microbiology I-II	LSC 207-208	8
Human Development or	ECE 107	
Child Development	ECE 117	3
College Algebra	MTH 150	3
Introduction to Physics I	PHY 121	4
		<hr/>
		34

General Education Requirements

Writing I-II	WRT 101-102	6
Introduction to Psychology I-II	PSY 100-101	6
Introduction to Sociology	SOC 100	3
U.S. Social Problems	SOC 101	3
Humanities I-II	HUM 110-111	8
Introductory Statistics	MTH 210	3
Introduction to Cultural Anthropology	ANT 110	3
		<hr/>
		32

**Students should be familiar with the requirements of the college they plan to attend.



Practical Nurse

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Practical Nurses in hospitals, clinics and medical offices.

The graduate is prepared to give quality nursing care as defined by the Arizona State Board of Nursing, and to work under the direct supervision of the registered nurse or physician.

The program consists of two semesters on campus and in affiliated hospitals. Nursing courses must be taken in sequence as each course builds upon the previous one. Required general education courses in each semester must be completed in advance or taken concurrently with the nursing courses. Students having satisfactorily completed this curriculum will graduate with an advanced certificate from Pima Community College and be eligible to take the State Board examination for licensure as an L.P.N.

Acceptance Into Program:

- Completion of Pima Community College acceptance requirements.
- Completion of a special application for the practical nurse program.
- Receipt of placement examination results in mathematics and reading comprehension (minimum requirement at the 12th grade reading level and 70 per cent in math test).
- Personal interview and recommendation by the campus Allied Health Services Review Committee.

General Requirements:

- Total credit: 36 credit hours.
- Work in residence: minimum 17 credit hours of major (NRS) courses to be completed in residence.

Advanced Certificate For Direct Employment

For Direct Employment					
Required Courses (36)	First Semester	Lec.	Lab	Cr. Hrs.	
Principle Anatomy/Physiology	LSC 102	3	+	3	4
Introduction to Health Care	HCA 154	3	+	0	3
Writing I or	WRT 101	3	+	0	
Practical Communications	WRT 150	3	+	0	3
Practical Nursing I	NRS 70	4	+	12	8
					18
	Second Semester				
Intro. to Infectious Diseases	LSC 117	3	+	0	3
Introduction to Psychology I	PSY 100	3	+	0	3
Introduction to Sociology	SOC 100	3	+	0	3
Practical Nursing II	NRS 72	4	+	15	9
					18

Office Education

A wide variety of courses and programs is available in the secretarial and clerical fields. Two-year programs leading to an Associate of Applied Science degree are available in the areas of administrative assistant, executive secretary, general secretary, legal secretary and medical secretary. One year programs leading to an advanced certificate are offered for clerk-typist and receptionist. Certificate and degree programs also are offered for bilingual secretary.

The office occupations curriculum provides training in shorthand, typewriting, business and management subjects and operating office machines. Two-year programs also include a minimum of 18 credits in general education: six in communications, three in mathematics; six or more in business, management or economics; and three or four in humanities, psychology, sociology and philosophy.

Clerk-Typist Advanced Certificate For Direct Employment

Required Courses (34)	First Semester	Cr. Hrs.
Typing II	OED 112	3
Mathematics of Business	BUS 51	3
Payroll/Applied Accounting Systems	ACC 50	3
Business English	OED 154	3
Human Relations	MAN 110	3
		<hr/>
		15
	Second Semester	
Calculating Machines	OED 121	2
Word Processing	OED 122	4
Office Procedures	OED 257	4
Business Communications	OED 259	3
Typing III	OED 252	3
Records Management	OED 103	3
		<hr/>
		19

Receptionist (Medical, Legal, General) Advanced Certificate For Direct Employment

Required Courses (31)	First Semester	Cr. Hrs.
Business English	OED 154	3
Typing II	OED 112	3
Mathematics of Business	BUS 51	3
Office Procedures	OED 257	4
Elective*		3
		<hr/>
		16
	Second Semester	
Payroll/Applied Accounting Systems or Business Communications	ACC 50	
	OED 259	3
Word Processing	OED 122	4
Calculating Machines	OED 121	2
Human Relations	MAN 110	3
Records Management	OED 103	3
		<hr/>
		15

*For medical receptionist, the elective should be Medical Office Procedures (OED 166). For legal receptionist, the elective should be Legal Terms (OED 180).

**Administrative Assistant
Associate of Applied Science Degree
For Direct Employment**

Required Courses (65-66)

	First Semester	Cr. Hrs.
Business English	OED 154	3
Typing II	OED 112	3
Mathematics of Business	BUS 51	3
Business & Professional Communication	SPE 120	3
Reading	REA 100 series	4
		<hr/> 16

Second Semester

Typing III	OED 252	3
Records Management	OED 103	3
Human Relations	MAN 110	3
Introduction to Computers	CSC 100	3
Business Communications	OED 259	3
		<hr/> 15

Third Semester

Business Law I	BUS 200	3
Calculating Machines	OED 121	2
Supervision	MAN 122	3
Principle of Accounting I	ACC 101	3
Office Procedures	OED 257	4
Introduction to Microeconomics	ECO 100	3
		<hr/> 18

Fourth Semester

Business Law II	BUS 201	3
Principle of Accounting II	ACC 102	3
Word Processing	OED 122	4
Business Organization & Management	MAN 280	3
General Education Elective*		3-4
		<hr/> 16-17

*General education elective can be selected from:

Humanities I	HUM 110	(4)
Introduction to Psychology I	PSY 100	(3)
Introduction to Sociology	SOC 100	(3)
Introduction to Philosophy I	PHI 101	(3)

**General Secretary
Associate of Applied Science Degree
For Direct Employment**

Required Courses (64-66)

	First Semester	Cr. Hrs.
Business English	OED 154	3
Shorthand I	OED 101	3
Typing I	OED 111	3
Mathematics of Business	BUS 51	3
Elective*		3-4
		<hr/> 15-16

Second Semester

Shorthand II	OED 102	3
Typing II	OED 112	3
Calculating Machines	OED 121	2
Records Management	OED 103	3
Word Processing	OED 122	4
		<hr/> 15

Third Semester		
Typing III	OED 252	3
Shorthand III	OED 253	3
Office Procedures	OED 257	4
Principle of Accounting I or Payroll/Applied Accounting Systems	ACC 101 ACC 50	3
Introduction to Computers or Introduction to Business	CSC 100 BUS 100	3
Elective		3
		<hr/> 19

Fourth Semester		
Human Relations	MAN 110	3
Business Law I	BUS 200	3
Shorthand IV	OED 264	3
Business Communications	OED 259	3
General Education Elective**		3-4
		<hr/> 15-16

*Recommended: Reading (REA 100 series)

**General education elective can be selected from:

Humanities I	HUM 110	(4)
Introduction to Psychology I	PSY 100	(3)
Introduction to Sociology	SOC 100	(3)
Introduction to Philosophy I	PHI 101	(3)

Executive, Legal, Medical Secretary Associate of Applied Science Degree For Direct Employment

Required Courses (60-62)	First Semester	Cr. Hrs.
Business English	OED 154	3
Shorthand II	OED 102	3
Typing II	OED 112	3
Mathematics of Business	BUS 51	3
Elective*		3-4
		<hr/> 15-16

Second Semester		
Business Communications	OED 259	3
Shorthand III	OED 253	3
Typing III	OED 252	3
Human Relations	MAN 110	3
Principle of Accounting I or Payroll/Applied Accounting Systems	ACC 101 ACC 50	3
		<hr/> 15

Third Semester		
Word Processing	OED 122	4
Calculating Machines	OED 121	2
Business Law I	BUS 200	3
Option 1		3
Option 2		3
		<hr/> 15

Fourth Semester		
Records Management	OED 103	3
General Education Elective**		3-4
Option 3		3
Option 4		3
Option 5		3
		<hr/> 15-16

*Recommended: Reading (REA 100 series).

**General education elective can be selected from:

Humanities I	HUM 110	(4)
Introduction to Psychology I	PSY 100	(3)
Introduction to Sociology	SOC 100	(3)
Introduction to Philosophy I	PHI 101	(3)

Note: Students interested in a secretarial specialization should choose appropriate courses from the three options given to Executive, Legal and Medical Secretary—

Executive Secretary

		Units
Option		
1	Office Procedures (OED 257)	(4)
2	Introduction to Business (BUS 100)	
or	Introduction to Computers (CSC 100)	(3)
3	Shorthand IV (OED 264)	
or	Principle of Accounting II (ACC 102)	(3)
4-5	Electives	(3)

Legal Secretary

Option		
1	Legal Terms (OED 180)	(3)
2	Legal Secretarial Procedures I (OED 250)	(3)
3	Legal Secretarial Procedures II (OED 251)	(3)
4	Business Law II (BUS 201)	
or	Criminal Law I (AJS 172)	(3)
5	Shorthand IV (OED 264)	
or	Office Procedures (OED 257)	(4)

Medical Secretary

Option		
1	Medical Office Procedures (OED 166)	(3)
2	Medical Terms (OED 255)	(3)
3	Medical Transcription (OED 256)	(3)
4-5	Electives	(6)

Bilingual Secretary

Basic Certificate

For Direct Employment

Required Courses		Cr. Hrs.
Typing II	OED 112	3
Español Comercial*	OED 130	2
Prácticas de Oficina*	OED 257	4
Business English	OED 154	3
Intensive Spanish* for Native Speakers I or	SPA 101	
Intermediate Spanish I*	SPA 210	4
		<hr/> 16

Note: Spanish III is a prerequisite to Spanish 210. Typing 1 or equivalent is a prerequisite to Typing II. Fluency in reading and writing Spanish is a prerequisite to Commercial Spanish and Prácticas de Oficina. Consult instructor for placement.

*Taught in Spanish

**Bilingual Secretary
Advanced Certificate
For Direct Employment**

Required Courses (35)		Cr. Hrs.
Basic Certificate Requirements (First 5 courses listed below)		
Typing II	OED 112	3
Español Comercial*	OED 130	2
Prácticas de Oficina*	OED 257	4
Business English	OED 154	3
Español Inten. Para. Estud. de Habla Hispana I* or Intermediate Spanish I*	SPA 101 SPA 210	4
		<hr/> 16
Plus the Following:		
Business Math	BUS 51	3
Shorthand II	OED 102	3
Business Communications	OED 259	3
Typing III	OED 252	3
Literatura Creativa I*	SPA 205	3
Español Inten. Para. Estud. de Habla Hispana II* or Intermediate Spanish II*	SPA 102 SPA 211	4
		<hr/> 19

Note: Shorthand I is a prerequisite for Shorthand II. A certain proficiency in reading and writing Spanish is a prerequisite for OED 130, Español Comercial (Commercial Spanish) and OED 257, Prácticas de Oficina (Office Procedures). Consult instructor for placement.

*Taught in Spanish

**Bilingual Secretary
Associate in Applied Science Degree
For Direct Employment**

Required Courses (63-65)		Cr. Hrs.
First Semester		
Typing II	OED 112	3
Shorthand I	OED 101	3
Business English	OED 154	3
Intermediate Spanish I or Español Inten. Para. Estud. de Habla Hispana I*	SPA 210 SPA 101	4
Elective		<hr/> 3-4
		16-17
Second Semester		
Typing III	OED 252	3
Shorthand II	OED 102	3
Business Math	BUS 51	3
Business Communications	OED 259	3
Intermediate Spanish II* or Español Inten. Para. Estud. de Habla Hispana II*	SPA 211 SPA 102	4
		<hr/> 16
Third Semester		
Human Relations	MAN 110	3
Calculating Machines	OED 121	2
Español Commercial*	OED 130	2
Shorthand III	OED 253	3
Literatura Creativa I*	SPA 205	3
General Education Elective**		<hr/> 3-4
		16-17

Literatura Creativa II*
 Prácticas de Oficina*
 Records Management
 Introducción a Negocios*
 Spanish Elective***

Fourth Semester

SPA 206	3
OED 257	4
OED 103	3
BUS 100	3

15

Note: Prerequisites for the program are Typing I or equivalent skill and Spanish III or equivalent Spanish proficiency.

*Taught in Spanish

**General Education Elective: Three units may be selected from the following areas: humanities, psychology, sociology, and philosophy.

***Highly recommended Spanish elective: SPA 225, SPA 226, SPA 240, or any SPA 200 series.



Optical Laboratory Technology and Ophthalmic Dispensing Technology

This program provides the theoretical and practical preparation to qualify graduates for employment as an optical laboratory technician, or as an ophthalmic dispenser and/or a contact lens technician in private offices and clinics. Other opportunities may be found as private practitioners, optical laboratory managers, ophthalmic sales representatives and ophthalmic research technicians.

The program consists of four semesters of theory and practical laboratory on campus including 240 hours of externship during the fourth semester. Graduates will qualify for an Associate of Science degree in ophthalmic dispensing technology from Pima Community College. To establish a private practice in Arizona, the graduate must complete 24 calendar months of apprenticeship as required by the Arizona State Board of Dispensing Opticians.

Acceptance Into Program:

- Completion of college and health sciences acceptance requirements.
- One year of math (including algebra or geometry).
- Receipt of placement examination results in math and reading comprehension.

General Requirements:

- Total credit: 60 credit hours for ophthalmic dispensing.
- Work in residence: ophthalmic dispensing—minimum 40 credit hours of major (ODT) and related courses to be completed in residence.

Restrictions:

- Correspondence study: ophthalmic dispensing—maximum 6 credit hours.
- Extension study: ophthalmic dispensing—maximum 22 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level

Ophthalmic Dispensing Technology
Associate of Science Degree
For Direct Employment

Required Courses (60)	First Semester	Lec.	Lab	Cr. Hrs.
Writing I or	WRT 101			
Practical Communications	WRT 150	3	+	0
Algebra I	MTH 70	3	+	0
Fundamental Physics	PHY 105	3	+	3
Optical Orientation I	ODT 51	5	+	3
				<hr/>
				16
	Second Semester			
Writing II or	WRT 102			
Technical Communications	WRT 154	3	+	0
Math Elective**		3	+	0
Social Science Elective	SOC or PSY	3	+	0
Optical Orientation II	ODT 52	3	+	3
Optical Laboratory* or	ODT 53	1	+	6
Elective* (facilitator's app.)		3	+	0
				<hr/>
				16
	Third Semester			
Optical Dispensing I	ODT 54	4	+	6
Contact Lenses I	ODT 55	4	+	3
Ophthalmic Assistant* or	ODT 56	2	+	3
Elective* (facilitator's app.)		3	+	0
				<hr/>
				14
	Fourth Semester			
Contact Lenses II	ODT 57	4	+	3
Optical Dispensing II	ODT 58	4	+	0
Senior Seminar	ODT 59	2	+	0
Co-op Ophthalmic Dispensing	ODT 299	0	+	15
				<hr/>
				14

*Students, in the second and third semesters, must take either ODT 53 or ODT 56. Students may take both if they wish. If students choose to take one of the two courses, an elective is taken in the other semester, with the approval of the program facilitator.

**Select from the following: BUS 51 Mathematics of Business; MTH 90 Elementary Geometry; MTH 130; Algebra II.

Physical Education

Physical Education at Pima College is based on the philosophy of leisure education for life. Physical Education fulfills its leisure obligation through the avenue of skilled development. It is suggested that students wishing to enroll in physical education courses should consult with a faculty member for specific information. Options available to students are: service activity classes, special interest classes, and teaching majors and minors. Students considering the teaching program should become familiar with the catalog of the senior college to which they intend to transfer.

Some courses may require a special fee and/or a special style of dress to insure safety while participating. It is the responsibility of the student to have in the college nurses office a record of a current valid medical examination, demonstrating acceptable health standards dated prior to enrollment in physical education classes. Health insurance is necessary, and available during registration.

Associate of Arts Degree For Transfer

Required Courses (63)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Introduction to Psychology I	PSY 100	3
Humanities I	HUM 110	4
Pro Act	PED	2
Introduction to Leisure Education*	PED 139	3
		<hr/> 15
	Second Semester	
Writing II	WRT 102	3
Humanities II	HUM 111	4
Algebra II or College Algebra	MTH 130 or 150	3
Pro Act	PED	2
Government**	POL	3
		<hr/> 15
	Third Semester	
History of Physical Education	PED 149	2
Anatomy & Physiology I	LSC 120	4
Elementary School Physical Education	PED 130	3
Pro Act	PED	2
Facilities for Physical Ed. and Recreation	PED 120	2
Speech Elective	SPE	3
		<hr/> 16
	Fourth Semester	
Anatomy & Physiology II	LSC 121	4
History Elective**		3
Sports Officiating*	PED 145	2
Foundations of Athletic Training*	PED 125	3
Pro Act	PED	2
Elective		3
		<hr/> 17

*Highly recommended electives.

**POL 112 National and State Constitutions, and HIS 141 or HIS 142 U.S. History I or II are needed for state certification.

Additional electives may be chosen from the following courses with the consent and approval of the subject area coordinator or faculty advisor.

Practicum I & II	PED 1 & 2
Introduction to Sociology	SOC 100
Child Growth & Development	ECE 117
Introduction to Health Science	HED 136
Elementary School Health Education	HED 137
Modern Dance (Women)	PED 144

Physics

Associate of Science Degree For Transfer

Suggested Courses (63-65)

Writing I
Anal. Geometry & Calculus I
Introductory Mechanics
Fortran IV Programming
Social Science Elective*

Writing II
Anal. Geometry & Calculus II
Introduction Electricity & Magnetism
General Chemistry I
Social Science Elective

Anal. Geometry & Calculus III
Introduction to Waves & Heat
General Chemistry II
Humanities Elective
Physical Education

Linear Algebra & Diff. Equations
Introduction to Modern Physics
Elementary German I
Humanities Elective
Physical Education

First Semester

WRT 101
MTH 180
PHY 210
CSC 140

Cr. Hrs.

3
3
4
3
3

16

Second Semester

WRT 102
MTH 185
PHY 216
CHM 120

3
3
4
4
3

17

Third Semester

MTH 215
PHY 221
CHM 121

4
3
4

3-4

PED

1

15-16

Fourth Semester

MTH 220
PHY 230
GER 110

4
3
4

3-4

PED

1

15-16

*For course electives in humanities and social sciences consult the catalog of the college or university you plan to enter.

Note: The courses suggested meet University of Arizona requirements for the first two years of a Bachelor of Science Degree.

Pre-Law

Colleges of Law usually have no specific pre-legal course requirements. Although a Bachelor's degree is usually required, the degree itself may be in any four-year program which the student selects. Students may choose degrees in Liberal Arts or Business Administration, although any Bachelor's degree is acceptable. Students should develop their programs with advisors. Pre-law advisors at the West Campus are available through the Business and Human Resources Area.

In addition to this four-year degree, an acceptable score on the Law School Admissions Test (LSAT) is required to enter a college of law. Each college of law has its own requirements for Grade Point Average and LSAT scores.

Public Administration

The Public Administration Transfer Program is for students interested in working in the public sector such as departments or agencies associated with municipal, state or federal governments. Students completing the described program will be eligible for an Associate of Arts degree in Public Administration.

Students specifically interested in receiving an Associate of Arts degree in Corrections or Criminal Justice should refer to the programs listed in this catalog under the heading of "Administration of Justice."

Transfer students should follow the requirements of the four-year institutions which they plan to attend and consult a faculty advisor at Pima Community College.

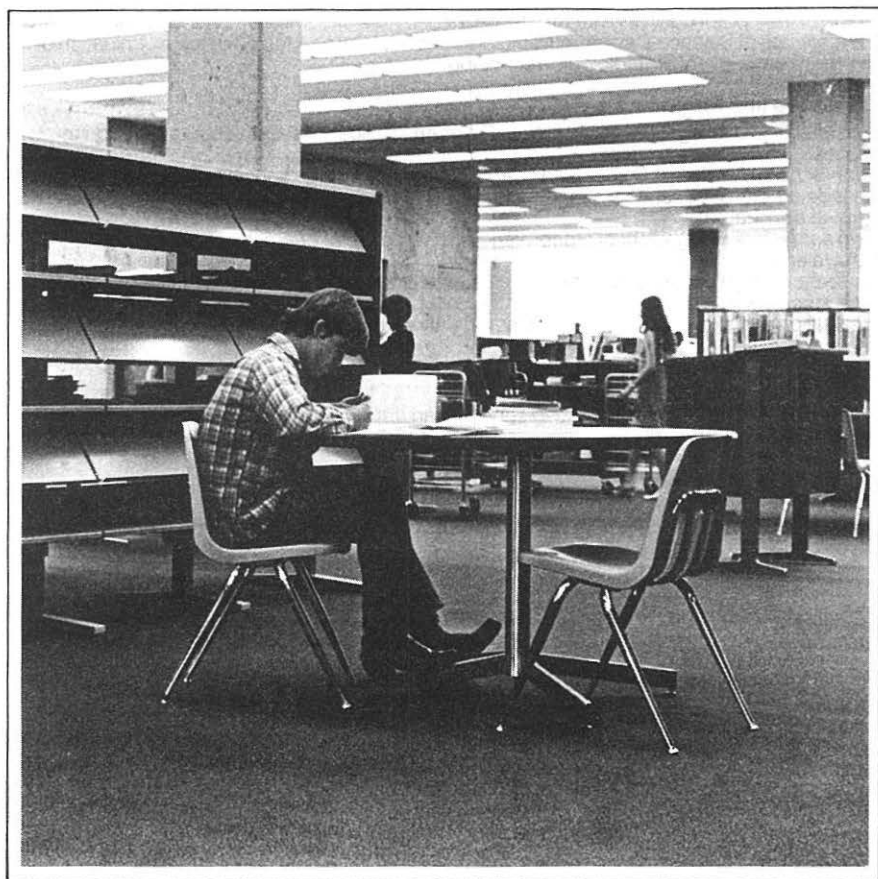
Associate of Arts Degree For Transfer

Required Courses (62-66)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Introduction to Logic or Natural Science* (1)	PHI 120	3-4
American National Government	POL 110	3
Social Science Elective or Math* (2)		3
Business & Professional Communication	SPE 120	3
Physical Education Elective	PED	1
		<hr/> 16-17
	Second Semester	
Writing II	WRT 102	3
Introduction to Logic or Natural Science* (1)	PHI 120	3-4
Finite Math	MTH 170	3
American State & Local Government	POL 111	3
Social Science Elective* (2)		3
Physical Education Elective	PED	1
		<hr/> 16-17
	Third Semester	
Introduction to Public Administration	PAD 105	3
Introduction to Microeconomics	ECO 100	3
Stat. Methods in Business & Ind. I	BUS 205	3
Humanities or Foreign Language* (3)		3-4
Introduction to Computers	CSC 100	3
		<hr/> 15-16
	Fourth Semester	
Accounting for Public Agencies	ACC 173	3
Environmental Factors in the Admin. Process	PAD 215	3
Introduction to Macroeconomics	ECO 101	3
Elective (see advisor)		3
Humanities or Foreign Language* (3)		3-4
		<hr/> 15-16

* (1) Fulfilled by PHI 120 and 3-4 units of natural science or by 2 semesters of natural science. The natural science courses may be selected from the following: (Although not required, students may enroll in laboratories and use lab units as free electives, unless otherwise specified) AST 101, 102 (111 and 112 are labs); CHM 101, 102; ESC 101, 102; and LSC 103, 104. In the case of the following courses: ESC 120, 121; LSC 207, 208; and PHY 121, 122, labs are required.

(2) By the end of the second year, students will be expected to have completed 6 units in one of the following fields: anthropology, cultural geography, psychology, or sociology. Upon transfer to the university, students will be expected to complete 6 additional units in one other field, chosen from the previous list.

(3) Fulfilled by either 2 semesters (8 units) of a single foreign language, or Humanities I and II (HUM 110, 111), or other selected Humanities electives. See an advisor for information concerning these electives.



Radiologic Technology

Introduction:

This curriculum provides the theoretical and practical preparation to qualify graduates for employment as Radiologic Technologists in hospitals, clinics, medical offices, or for transfer into specialized four-year programs.

Program Description:

The total program consists of four semesters on Campus and a minimum of 2200 hours of externship practicum in an affiliated hospital Radiology Department. Students, having satisfactorily completed all required prerequisites, will be scheduled to enter the hospital portion of their practicum beginning with the third semester. Graduates will be qualified for the Associate of Science Degree in Radiologic Technology and to set for the examination of the American Registry of Radiologic Technologists.

Acceptance Into Program:

- Completion of College and Allied Health Program applications and acceptance requirements.
- High School Diploma or G.E.D. Certificate. Submission of high school transcripts and college credits of all schools attended including Pima Community College District transcript (if applicable).
- Two semesters of high school algebra and one semester of geometry or the college equivalent.
- One year of high school chemistry or the college equivalent.
- One semester of high school biology or the college equivalent.
- Evaluation and acceptance by West Campus Allied Health Programs Selections Committee.

Advising:

Individual applicants are requested to schedule an appointment with a Radiologic Technology advisor.

General Requirements:

- Total Credits: 105 semester hours.
- Work in Residence: Minimum 75 semester hours of major (RAD) courses to be completed in residence.

Restrictions:

- Correspondence study: Maximum, 6 semester hours.
- Extension study: Maximum, 27 semester hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Associate of Science Degree For Direct Employment

Required Courses (105)	First Semester	Lec.	Lab	Cr. Hrs.	
Writing I	WRT 101	3	+	0	3
Introduction to Health Care	HCA 54	3	+	0	3
Algebra II	MTH 130	3	+	0	3
Human Anatomy & Physics I	LSC 120	3	+	3	4
Radiologic Fund.	RAD 71	3	+	3	4
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					17
	Second Semester				
Fundamental Physics	PHY 105	3	+	3	4
Human Anatomy & Physics II	LSC 121	3	+	3	4
Rad. Processing & Technology	RAD 72	3	+	3	4
Rad. Positioning I	RAD 73	3	+	3	4
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Third Semester					
Writing II	WRT 102	3	+	0	3
Rad. Positioning II	RAD 81	4	+	3	5
Radiologic Physics I	RAD 82	4	+	3	5
Clinical Procedures I	RAD 83	0	+	6	2
Radiologic Biology, Nuclear Medicine & Therapy	RAD 84	3	+	0	3
					<hr/> 18
Fourth Semester					
Introduction to Psychology I	PSY 100	3	+	0	3
Rad. Positioning III	RAD 85	4	+	3	5
Clinical Procedures II	RAD 85	0	+	6	2
Radiologic Physics II	RAD 88	4	+	3	5
Elective*		3	+	0	3
					<hr/> 18
Fifth Semester					
(Summer)					
Hospital Extern. Pract. I	RAD 91	0	+	40	12
Sixth Semester					
Hospital Extern. Pract. II	RAD 92	0	+	40	12
Seventh Semester					
Hospital Extern. Pract. III	RAD 93	0	+	40	12

*(Coordinator's permission required)

Real Estate

The Real Estate Program is designed to fulfill industry needs in the Tucson area. There are basically two program options; one in Sales/Brokerage which includes a two-year Associate of Applied Science Degree, and Basic and Advanced Certificates; the second option offers Basic and an Advanced Certificate in Real Estate Escrow.

Real Estate Sales/Brokerage

This real estate option prepares persons to handle the sales of private residences, apartment buildings, industrial and commercial property and unimproved land. Students also are prepared in finance, real property management, advertising, appraising, site developing, urban renewal, public housing and the rehabilitation of property.

Training in real estate is offered through a one-semester basic and a two-semester advanced certificate program, and also a two-year Associate of Applied Science degree program.

The basic certificate program, intended for the selling agent, qualifies students to take the state licensing exam. Persons interested in becoming brokers should take the advanced certificate program. However, three years of experience in real estate also is required to take the state license examination in brokerage. 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 when selecting courses at Pima.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Principle of Accounting	ACC 101	3
Business Law I	BUS 200	3
Math (based on placement test)	MTH	3
Writing I or Practical Communications	WRT 101 WRT 150	3
Real Estate Principles	RLS 101	3
		<hr/> 15

Advanced Certificate For Direct Employment

Required Courses		Cr. Hrs.
Basic Certificate Requirements		15
Real Estate Finance	FIN 205	3
Salesmanship	MKT 113	3
Real Estate Practices	RLS 102	3
Real Estate Law	RLS 201	3
Business & Professional Communication	SPE 120	3
		<hr/> 30

Associate of Applied Science Degree For Direct Employment

Required Courses (60)	First Semester	Cr. Hrs.
Principle of Accounting I	ACC 101	3
Real Estate Principles	RLS 101	3
Math (based on placement test)	MTH	3
Writing I or Practical Communications	WRT 101 WRT 150	3
Elective**		3
		<hr/> 15

Second Semester		
Business Law I	BUS 200	3
Introduction to Microeconomics	ECO 100	3
Business & Professional Communication	SPE 120	3
Real Estate Practices	RLS 102	3
Salesmanship	MKT 113	3
		<hr/>
		15
Third Semester		
Introduction to Macroeconomics	ECO 101	3
Real Estate Finance	FIN 205	3
Human Relations	MAN 110	3
Elective*		3
Elective**		3
		<hr/>
		15
Fourth Semester		
Small Business Management or Principle of Accounting II	MAN 124	
Real Estate Law	ACC 102	3
Real Estate Appraisals	RLS 201	3
Elective*	RLS 202	3
Elective**		3
		<hr/>
		15

*Electives should be selected from history, humanities, psychology, sociology, philosophy, political science or anthropology.

**Electives should be chosen from courses above the 100 level which are related to the real estate industry.

Real Estate Escrow

This program option is designed for persons preparing for employment as escrow agents, officers, or supervisors. It also provides professional education for those currently employed.

Basic Certificate for Direct Employment

		Cr. Hrs.
Escrow Principles	RLS 120	3
Escrow Practices	RLS 121	3
Real Estate Principles	RLS 101	3
Real Estate Finance	FIN 205	3
Elective*		3
		<hr/>
		15

Advanced Certificate For Direct Employment

Basic Certificate Requirements (15)		Cr. Hrs.
Escrow Problems	RLS 210	3
Real Estate Law	RLS 201	3
Principle of Accounting I or Mathematics of Business	ACC 101	3
Electives*	BUS 051	3
		<hr/>
		30

*Recommended by advisor to satisfy individual student requirements.

Recreation

Recreation, or the use of leisure time, is becoming one of the fastest growing facets of American life. With the increased interest in recreation is a need for trained recreation personnel—trained not only in the technical aspects of the field, but in leadership as well. Recreational programs at Pima Community College are divided into three areas: degree programs for recreational leader and natural resource recreation, with both aimed at direct employment; and the pre-professional transfer program. Students enrolled in the programs will be able to enter the career ladder at any stage, functioning as a recreation attendant, park aide, activity specialist, facility manager or natural resource technician. With increased education and recreational experience, the student will be able to enter positions requiring more responsibility on the career ladder approach.

Graduates planning to enter positions with state, municipal or federal agencies will be required to take Civil Service examinations.

Natural Resource Recreation

Recreation Leader

Associate of Applied Science Degree For Direct Employment

Required Courses (62-72)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Mathematics of Business	BUS 51	3
Introduction to Parks & Recreation	REC 101	3
Ecology I	LSC 150	4
Option A or B		3-5
		16-18
	Second Semester	
Writing II or	WRT 102	
Technical Communications	WRT 154	3
Business & Professional Communications	SPE 120	3
Outdoor Recreation-Education	REC 115	3
Survival	REC 118	2
Ecology II	LSC 151	4
Option A or B		1-3
		16-18
	Third Semester	
Recreation Administration & Finance	REC 103	3
Public Relations & Communigraphics	REC 74	3
Survey of Western Flora	LSC 171	3
Geology of the Western U.S.	ESC 110	3
Option A or B		3-6
		15-18
	Fourth Semester	
Group Leadership	REC 102	2
Conservation of Natural Resources	LSC 170	3
Western Land Vertebrates	LSC 172	3
Cooperative Recreation Training	REC 299	3
Option A or B		4-7
		15-18

Note:

A. NATURAL RESOURCE RECREATION majors should select electives from Option A to bring their total program to 62-72 semester hours.

B. RECREATION LEADER students should select electives from Option B to bring their total program to 62-72 semester hours.

Option A—Natural Resource Recreation

Employment requirements vary depending upon the degree of responsibility. Among employment possibilities are park attendant guide, wrangler, outdoor recreation facilities manager, conservation technician, campground caretaker, game protector, fish warden, wildlife aide and hunter safety coordinator.

		Cr. Hrs.
Federal Lands & Management	REC 76	1
Federal Lands & Urbanization	REC 77	1
Federal Lands & Fire Control Pollution	REC 78	2
Federal Lands & Visitor Service	REC 79	1
Introduction to Game Management	LSC 173	3
Human Relations	MAN 110	3
Recreation Systems & Management	REC 52	3
Park Administration	REC 59	3
Water Recreation & Resources	REC 75	3
Facilities for Physical Ed. & Recreation	PED 120	2
Camping & Hiking and/or	REC 150	
Advanced Trapshooting	REC 256	1-2

Option B—Recreation Leader

Employment possibilities include youth organization, community centers, commercial recreation areas, playgrounds, amusements, camp sites, sports specialist, crafts specialist, life guard, industrial plants and camp counselors.

		Cr. Hrs.
Stagecraft & Production I	DRA 120	3
Child Development	ECE 117	3
Dance	PED 144	2
Sports Officiating	PED 145	2
Recreation Arts & Crafts	REC 51	3
Program Planning	REC 114	3
Recreation for Special Groups	REC 116	3
Recreational Games	REC 119	2
Facilities for Physical Ed. & Recreation	PED 120	2
First Aid	REC 121	2
Camping & Hiking and/or	REC 150	
Advanced Trapshooting	REC 256	1-2

Pre-Professional Recreation For Transfer

Students should follow the program of the institution to which they plan to transfer, but they may take any of the following courses:

		Cr. Hrs.
Introduction to Parks & Recreation	REC 101	3
Group Leadership	REC 102	2
Administration & Finance	REC 103	3
Survival	REC 118	2
Outdoor Recreation Education	REC 115	3
Program Planning & Organization	REC 114	3
Recreational Games	REC 119	2
		<hr/> 18

General Education Requirements:

Writing I-II	WRT 101-102	6
Public Speaking	SPE 110	3
College Algebra	MTH 150	3
Ecology I-II	LSC 150-151	8
Electives		<hr/> 30
		50

Respiratory Therapy

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Respiratory Therapists in hospitals, clinics, medical offices or for transfer into specialized four-year programs.

The total program consists of two semesters of supportive course work followed by a summer session and two semesters of major curriculum work. Students having successfully completed all required prerequisites will be scheduled to enter the hospital portion of their practicum beginning with the first semester of the major curriculum. Graduates will be qualified for the Associate of Science degree in Respiratory Therapy. Students who have completed an Associate degree or higher need only complete the required courses listed under the third, fourth, and fifth semester to qualify for an advanced certificate in Respiratory Therapy.

Acceptance Into Program (Major Curriculum/Third Semester):

- Completion of college and allied health programs acceptance requirements.
- Completion of one-year of High School Chemistry or CHM 110 or its equivalent is pre-requisite to beginning the first year curriculum.
- Receipt of high school or college level transcripts to indicate the student has successfully completed the first year at the program or is a registered nurse; or is a college graduate holding a degree in a biological science, or is a college graduate holding a degree in liberal arts.
- Receipt of placement examination results in math and reading comprehension.
- Personal interview and recommendation by the program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit:
CERTIFICATE—44 credit hours.
ASSOCIATE DEGREE—78 credit hours.
- Work in residence: minimum 44 credit hours of major (RTH) courses to be completed in residence.

Restriction:

- Correspondence study: maximum 6 credit hours.
- Extension study: maximum 34 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Associate of Science Degree For Direct Employment

Required Courses (78)	First Semester	Lec.	Lab	Cr. Hrs.	
Introduction to Health Care	HCA 154	3	+	0	3
Human Anatomy — Physics I	LSC 120	3	+	3	4
Algebra I	MTH 70	3	+	0	3
Fund. Chemistry II	CHM 111	3	+	3	4
Writing I	WRT 101	3	+	0	3
					<hr/>
					17
	Second Semester				
Writing II	WRT 102	3	+	0	3
Human Anatomy & Physics II	LSC 121	3	+	3	4
Infectious Diseases	LSC 117	3	+	0	3
Introduction to Psychology I	PSY 100	3	+	0	3
Humanities Elective		3	+	0	3
					<hr/>
					16

Third Semester
(Summer)

Intro. to Respiratory Therapy	RTH 71	3	+	6	5
Respiratory Physiology	RTH 82	5	+	0	5
					<hr/> 10

Fourth Semester

Diseases I	RTH 86	4	+	0	4
Clinical Medicine	RTH 73	3	+	0	3
Respiratory Care I	RTH 83	4	+	0	5
Clinical Procedures I	RTH 91	0	+	15	5
					<hr/> 17

Fifth Semester

Diseases II	RTH 89	4	+	0	4
Respiratory Care II	RTH 84	4	+	3	5
Clinical Procedures II	RTH 92	0	+	24	8
					<hr/> 17

Note: Students who have received an Associate degree or higher need only complete the required courses listed under the third through fifth semester (for 44 credit hours) to qualify for an advanced certification in Respiratory Therapy.

Sheet Metal

Students are provided conditions similar to industry through a fully equipped sheet metal laboratory and learn to calculate, size, lay-out and fabricate duct work for use in air-conditioning installations. The students, in addition, are taught how to adapt to other areas of the sheet metal industry.

A person majoring in a sheet metal curriculum may find Cooperative Education offers an ideal way of gaining additional skills-application experience while attending classes. Consult a Cooperative Education teacher-coordinator for details.

Fundamentals of Sheet Metal Fabrication

Basic Certificate

For Direct Employment

Required Courses		Cr. Hrs.
Sheet Metal I-II	SML 110, 120	8
Sheet Metal Pattern Layout I	SML 130	3
Technical Math I-II	MTH 110, 120	6
Technical Drafting I	DFT 150	3
Human Relations	MAN 110	3
		<hr/> 23

Sheet Metal Layout and Fabrication

Technical Certificate

For Direct Employment

Required Courses		Cr. Hrs.
Sheet Metal I-II	SML 110, 120	8
Architectural Sheet Metal	SML 220	3
Sheet Metal Pattern Layout I-III	SML 130, 135, 210	9
Technical Math I-II	MTH 110, 120	6
Technical Drafting I	DFT 150	3
Practical Communications	WRT 150	3
Technical Communications	WRT 154	3
Human Relations	MAN 110	3
Air Conditioning Fundamentals	ACD 101	3
Combination Welding	WLD 110	3
		<hr/> 44

Air Conditioning and Sheet Metal Technology

Associate of Applied Science Degree

For Direct Employment

Required Courses (75)	First Semester	Cr. Hrs.
Air Conditioning Fundamentals	ACD 101	3
Air Conditioning Phase I	ACD 120	4
Technical Math I	MTH 110	3
Sheet Metal I	SML 110	4
Technical Drafting I	DFT 150	3
		<hr/> 17
	Second Semester	
Sheet Metal Pattern Layout I	SML 130	3
Air Conditioning Phase II	ACD 125	4
Technical Math II	MTH 120	3
Sheet Metal II	SML 120	4
Practical Communications	WRT 150	3
Combination Welding	WLD 110	3
		<hr/> 20

Air Conditioning Phase III
 Human Relations
 Technical Physics I
 Sheet Metal Pattern Layout II
 Technical Communications
 Estimating I

Third Semester

ACD 210	4
MAN 110	3
PHY 101	3
SML 135	3
WRT 154	3
ACD 250	3
	<hr/>
	19

Air Conditioning Phase IV
 Sheet Metal Pattern Layout III
 Architectural Sheet Metal
 Estimating II
 Technical Physics II
 Elective in Humanities, Psychology,
 Sociology or Philosophy

Fourth Semester

ACD 220	4
SML 210	3
SML 220	3
ACD 260	3
PHY 102	3
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	3
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	19

Social Services

The Social Services program qualifies students for employment in a variety of community service agencies which deal with mental health, welfare, child care, education, retardation, counseling and community organization. Agencies offering job possibilities are connected with city, county, state and school governments; religious groups; private organizations; neighborhood councils; and other social action groups.

The Associate degree graduate is a relatively new addition to the human services team, but the field currently is expanding on the local and national level due to a concentrated effort to approach social problems on a more human and individual basis. Job responsibilities for the graduate include working directly with clients, handling initial interviews, collecting data, making home visits, making recommendations for staff action, and easing communication channels between the professional worker and the client.

Various study programs have been designed to meet the different needs of students. Both a one-year certificate program and a two-year Associate of Arts program are available.

Students planning to transfer to four-year colleges or universities can satisfy their freshman and sophomore requirements at Pima, but should check the first two-year requirements of the university they plan to attend. (See section below, on university transfer programs.)

A subspecialty in drug counseling is available within the Social Services program. This course of study includes units on various treatment modalities, the physiological and psychological effects of drugs, current legislation and legal aspects of the drug situation in this country, case management of clients, and other topics important for the effective functioning of the counselor.

The various study programs require that students receive at least six units of field experience in a social service agency as part of the study process during the second year. It is important to take courses in sequence.

Social Services Basic Certificate For Direct Employment

Required Courses (30)

Introduction to Social Welfare
Introduction to Psychology I
Writing I
Electives

First Semester

SSE 133
PSY 100
WRT 101

Cr. Hrs.

3
3
3
6

15

Second Semester

Group Work
Community Organization & Development
Casework Methods
Writing II
Elective

SSE 235
SSE 216
SSE 134
WRT 102

3
3
3
3
3

15

Social Services (Subspecialty in Drug Counseling) Advanced Certificate

Follow the schedule for the Social Services Basic Certificate for Direct Employment (one year), but omitting the electives, and adding the following:

First Semester

Drugs in American Society
Political and Legal Aspects of Drug Use

SSE 115
SSE 127

Cr. Hrs.

3
3

Second Semester

Treatment of the Drug Abuser
Evaluation and Support of the Drug Abuser

SSE 218
SSE 217

3
3

12

**Social Services
Associate of Arts Degree
For Direct Employment**

Required Courses (60)	First Semester	Cr. Hrs.
Introduction to Social Welfare	SSE 133	3
Writing I	WRT 101	3
Introduction to Psychology I	PSY 100	3
Electives		6
		15
	Second Semester	
Casework Methods	SSE 134	3
Writing II	WRT 102	3
Introduction to Sociology	SOC 100	3
Electives		6
		15
	Third Semester	
Group Work	SSE 235	3
Oral Communication	SPE 102	3
SSE Field Experience	SSE 290	3
Electives		6
		15
	Fourth Semester	
Community Organization & Development	SSE 216	3
Electives		9
Social Service Elective		3
		15

Note: SSE 290 is required for students seeking the Associate of Arts degree for direct employment. It is recommended for transfer students. It is not required or recommended for the Basic Certificate for direct employment.

**Social Services (Subspecialty in Drug Counseling)
Associate of Arts Degree
For Direct Employment**

Follow the Associate of Arts Degree for Direct Employment (two years), but substitute the following courses for one elective in each semester:

	First Semester	Cr. Hrs.
Drugs in American Society	SSE 115	3
	Second Semester	
Political & Legal Aspects of Drug Use	SSE 127	3
	Third Semester	
Treatment of the Drug Abuser	SSE 218	3
	Fourth Semester	
Evaluation & Support of the Drug Abuser	SSE 217	3

University Transfer Programs:

Students interested in relating their Social Services studies at Pima Community College to a baccalaureate (four-year) program in Arizona could consider transferring into one of the following:

U of A—College of Business and Public Administration (with one of the majors in public administration);

College of Education (with major in rehabilitation);

College of Liberal Arts (with major in sociology);

ASU—College of Liberal Arts (with major in sociology or social welfare);

NAU—College of Public and Environmental Service (with one of the majors in sociology).

In each case, the student considering transfer must check the specific lower division (freshman-sophomore) catalog requirements at the institution being considered, and then identify equivalent courses offered at Pima Community College. An advisor in Social Services can assist students in this.

Suggested Electives (not necessarily for transfer)

There are many courses at Pima that would be helpful to students in Social Services. The following are just a few:

		Cr. Hrs.
Crisis Intervention—Theory Techniques	SSE 236	3
Introduction to Health Science	HED 136	3
History and Culture of the Mexican-American	HIS 149	3
American National Government & Politics	POL 110	3
American State and Local Govt. & Politics	POL 111	3
Introduction to Cultural Anthropology	ANT 110	3
Fundamentals of Crime & Delinquency	AJS 260	3
Juvenile Justice Procedures	AJS 212	3
Current U.S. Social Problems	SOC 101	3
Drugs in American Society	SSE 115	3
Introduction Social Psychology	PSY 102	3
Police Community & Human Relations	AJS 210	3
Intro. to Administration of Justice Systems	AJS 101	3
Understanding the Young Child	ECE 116	3

Speech

The two-year degree program assists students preparing for careers requiring extensive interaction with the public: business, law, education, politics, public relations, sales and theology. The student who plans to transfer to a four-year institution will find the program includes courses generally required of a Speech major in the first four semesters of study. However, the student should check the specific requirements of the institution to which he/she plans to transfer.

The speech curriculum is designed to improve the student's skills in public address, interpersonal and group communication, and to develop his understanding of communication behavior in social and career situations.

Associate of Arts Degree For Transfer

Suggested Semester Sequence (68)	First Semester	Cr. Hrs.
Introduction to Oral Communications	SPE 102	3
Forensics	SPE 125	1
Writing I	WRT 101	3
Foreign Language		4
Science/Math Elective		3-4
Elective		3
		<hr/> 17-18
	Second Semester	
Public Speaking	SPE 110	3
Writing II	WRT 102	3
Foreign Language		4
Science/Math Elective		3-4
Introduction to Logic as a suggested elective	PHI 120	3
		<hr/> 16-17
	Third Semester	
Voice and Diction	SPE 105	2
Humanities Elective*		3-4
Introduction to Psychology I	PSY 100	3
Foreign Language		4
Argumentation & Debate	SPE 124	3
		<hr/> 15-16
	Fourth Semester	
Oral Interpretation of Literature	SPE 136	3
Humanities Elective*		3-4
Introduction to Psychology II	PSY 101	3
Foreign Language		4
Small Group Discussion	SPE 130	3
		<hr/> 16-17

*For course elective, consult the catalog of the college to which you plan to transfer.

Wastewater Technology

The Wastewater Technology certificate and degree programs have been designed to train competent wastewater plant operators and maintenance personnel. These operators will have the capability of working and communicating directly with engineers, chemists and supervisory personnel. Currently, the State of Arizona, through the Department of Health Services, Bureau of Water Quality Control, certifies operators for employment through grade level examinations. This curriculum covers both the technical and practical aspects necessary to assist in the preparation for taking these examinations at grade levels I, II, III, and IV.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Intro. to Water & Wastewater Technology	WWT 101	3
Small Treatment Plants	WWT 103	1
Quality Monitoring	WWT 105	1
Hydraulics of Water	WWT 107	2
Technical Mathematics I	MTH 110	3
Practical Communications	WRT 150	3
Cooperative Education	WWT 199	3
		16

Advanced Certificate For Direct Employment

Required Courses		Cr. Hrs.
Basic Certificate Requirements		16
Sewage System Maintenance	WWT 110	1
Chemical Control Processes	WWT 112	1
Inter. Biological Wastewater Treatment	WWT 115	3
Applied Chemistry in Water & Wastewater	WWT 203	2
Technical Communications	WRT 154	3
Supervision	MAN 122	3
Cooperative Education	WWT 199	3
		32

Associate of Applied Science Degree For Direct Employment

Required Courses (65)		Cr. Hrs.
Intro. to Water & Wastewater Technology Small Treatment Plants Quality Monitoring Hydraulics of Water Technical Mathematics I Practical Communications Cooperative Education	WWT 101	3
	WWT 103	1
	WWT 105	1
	WWT 107	2
	MTH 110	3
	WRT 150	3
	WWT 199	3
		16
First Semester		
Sewerage System Maintenance Chemical Control Processes Wastewater Plant Safety Inter. Biological Wastewater Treatment Technical Communications Supervision Cooperative Education	WWT 110	1
	WWT 112	1
	WWT 114	1
	WWT 115	3
	WRT 154	3
	MAN 122	3
	WWT 199	3
		15
Second Semester		

Third Semester

Advanced Biological Wastewater Treatment	WWT 201	3
Applied Chemistry in Water and Wastewater	WWT 203	2
Wastewater Collection Systems	WWT 209	3
Applied Chemical & Microbiological Analysis	WWT 215	3
Technical Mathematics II	MTH 120	3
Cooperative Education	WWT 299	3
		<hr/>
		17

Fourth Semester

Wastewater Treatment Processes	WWT 205	2
Wastewater Hydraulics	WWT 220	3
Physical-Chemical Sewage Treatment	WWT 225	3
Wastewater Treatment Plant & Collection System Design & Construction	WWT 235	3
Human Relations	MAN 110	3
Cooperative Education	WWT 299	3
		<hr/>
		17

Welding

The facilities for this program at Pima Community College are among the best in the Southwest. Students in these programs gain invaluable experiences through classroom and laboratory settings similar to those found in industry.

A person majoring in a welding curriculum may find Cooperative Education offers an ideal way of gaining additional skills-application experience while attending classes. Consult a Cooperative Education teacher-coordinator for details.

Basic Certificate For Direct Employment

Required Courses		Cr. Hrs.
Oxy-Acetylene Welding	WLD 150	4
Arc Welding	WLD 160	4
Technical Drafting I	DFT 150	3
Technical Math I	MTH 110	3
Basic Metallurgy	MAC 130	3
Blueprint Reading	WLD 115	3
		<hr/> 20

Technical Certificate For Direct Employment

Required Courses		Cr. Hrs.
Oxy-Acetylene Welding	WLD 150	4
Arc Welding	WLD 160	4
Pipe Welding	WLD 250	4
Inert Gas Welding	WLD 260	4
Technical Drafting I	DFT 150	3
Technical Math I-II	MTH 110, 120	6
Basic Metallurgy	MAC 130	3
Physical Metallurgy	MAC 135	3
Blueprint Reading	WLD 115	3
Practical Communications	WRT 150	3
Human Relations	MAN 110	3
Machine Shop I	MAC 110	4
Sheet Metal Layout I	SML 130	3
		<hr/> 47

Associate of Applied Science Degree For Direct Employment

Required Courses (68)		Cr. Hrs.
Oxy-Acetylene Welding	WLD 150	4
Basic Metallurgy	MAC 130	3
Blueprint Reading	WLD 115	3
Technical Math I	MTH 110	3
Sheet Metal Layout I	SML 130	3
		<hr/> 16
First Semester		
Arc Welding	WLD 160	4
Physical Metallurgy	MAC 135	3
Technical Drafting I	DFT 150	3
Technical Math II	MTH 120	3
Sheet Metal Layout II	SML 135	3
		<hr/> 16

Pipe Welding
 Technical Physics I
 Machine Shop I
 Sheet Metal Layout III
 Practical Communications
 Humanities, Psychology, Sociology
 or Philosophy Elective

Third Semester

WLD 250 4
 PHY 101 3
 MAC 110 4
 SML 210 3
 WRT 150 3

3

20

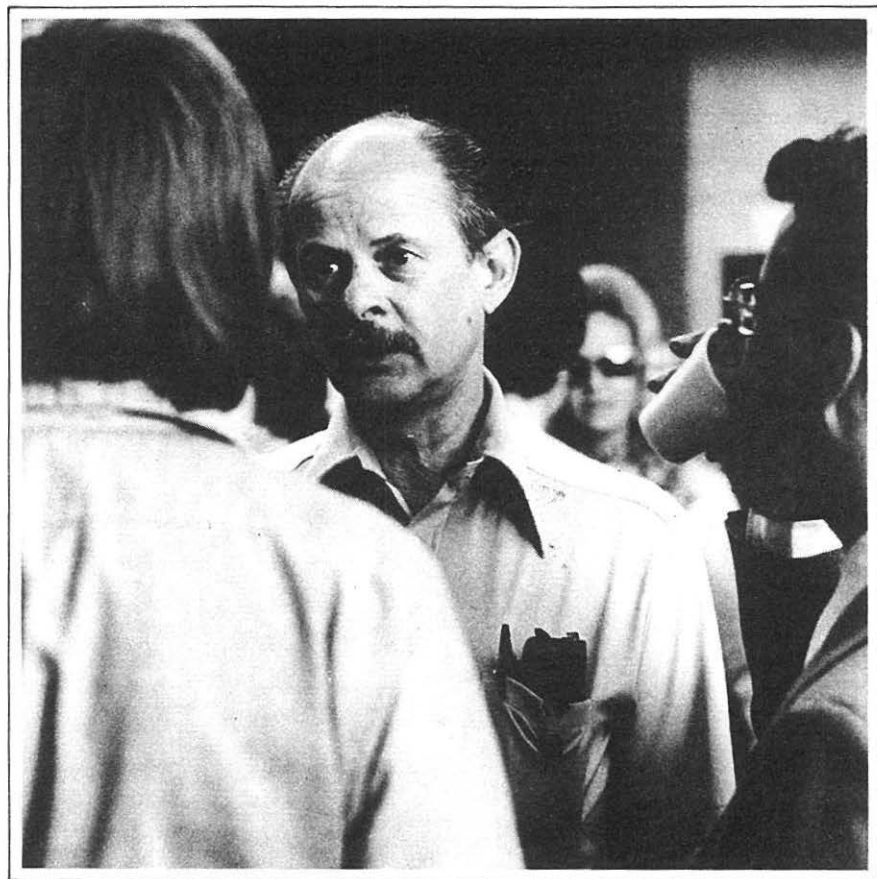
Fourth Semester

Inert Gas Welding
 Technical Physics II
 Human Relations
 Estimating I
 Technical Communications

WLD 260 4
 PHY 102 3
 MAN 110 3
 ACD 250 3
 WRT 154 3

3

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Youth Care

The program will offer an advanced certificate (required 33 credit hours) and an Associate of Applied Science Degree (required 62–68 credit hours). Within these options enough flexibility will exist for the student to choose from several specific competency areas through which to increase individual skills. The program will offer a balance between core and general education requirements. It will offer a balance between academic instruction and supervised field experience. Students within this program will be closely supervised by faculty advisors.

Youth Care Advanced Certificate

(33 units required)

		Cr. Hrs.
Introduction to Youth Care	YCA 163	3
Effective Parenting	ECE 114	3
Casework Methods	SSE 134	3
Group Work	SSE 235	3
Youth Care Techniques	YCA 263	3
Field Experience*	YCA 290	6
Reading 100 Series†	REA 100	4
Writing I or	WRT 101	3
Practical Communications	WRT 154	3
Speech Elective		3
First Aid	REC 121	2
	Total Units Required	33

*Field Experience must be taken in the second semester.

†Four units of electives may be substituted for this requirement if the student can demonstrate competency required for satisfactory course completion of the REA 100 series.

Youth Care
Associate of Applied Science Degree

Required Courses (62-68)

	First Semester	Cr. Hrs.
Introduction to Youth Care	YCA 163	3
Human Development or Child Development	ECE 107 ECE 117	3
Reading 100 series*	REA 100 series	4
Writing I or Practical Communication	WRT 101 WRT 150	3
Introduction to Psychology	PSY 100	3
Elective		2-3
		<hr/> 18-19

†Second Semester

Field Experience	YCA 290	3
Writing II or Technical Communications	WRT 102 WRT 154	3
Effective Parenting	ECE 114	3
Casework Methods	SSE 134	3
Speech Elective		3
		<hr/> 15

Third Semester

Juvenile Justice Procedures	AJS 212	3
Group Work	SSE 235	3
Youth Care Techniques	YCA 263	3
Math or Natural Science elective		3-4
Electives		3-6
		<hr/> 15-19

†Fourth Semester

Youth Care Techniques	YCA 263	3
Field Experience	YCA 290	3
Social Science Elective#		3
Electives		5-6
		<hr/> 14-15

*Four units of electives may be substituted for this requirement if the student can demonstrate competency required for satisfactory course of the REA 100 series.

†Student should take no more than a total of 15 units when participating in the YCA 290 course.

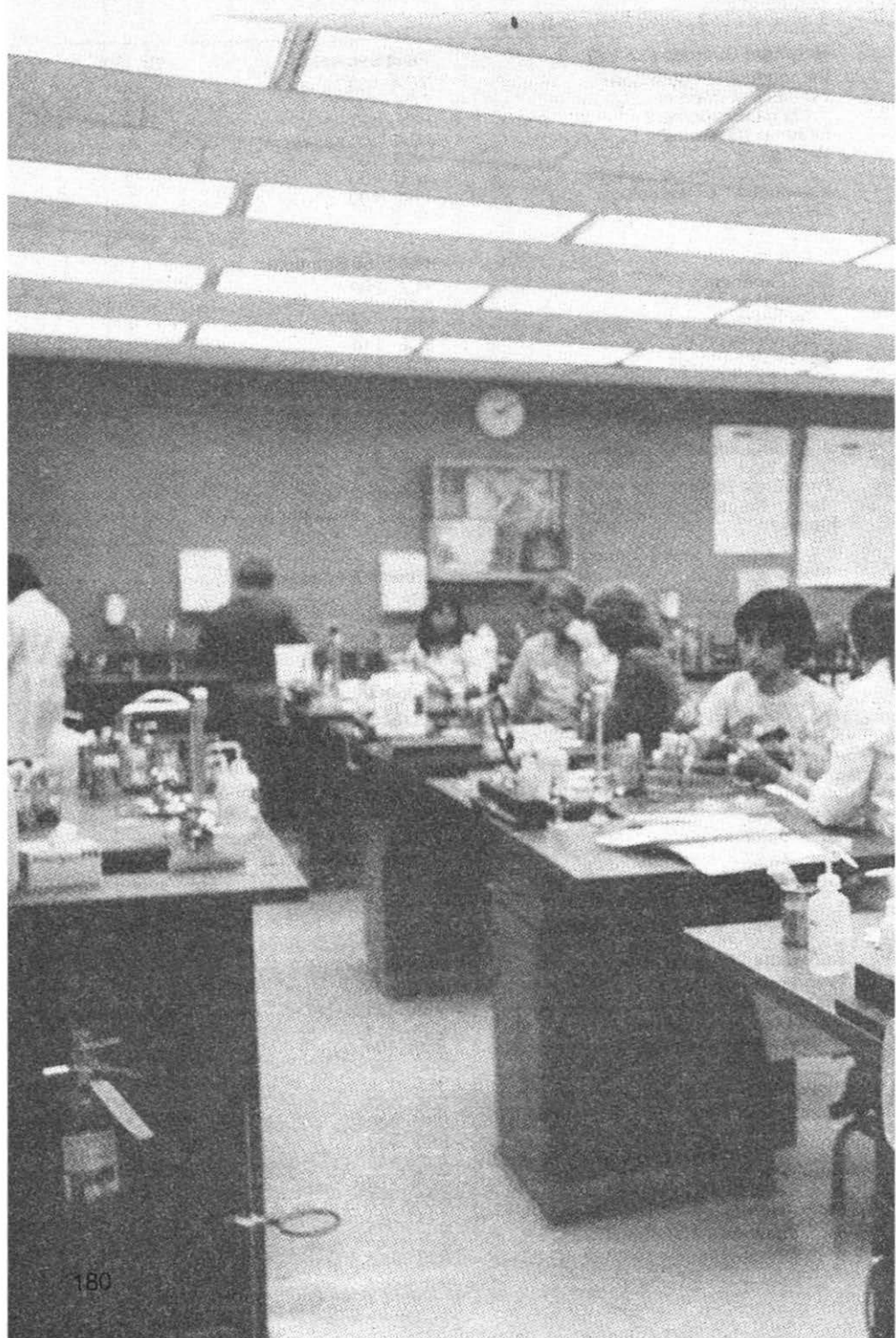
#Satisfied from Sociology, Psychology or Anthropology.

Total Units

Core Requirements	30
General Education Requirements	22-23
Electives	10-15
	<hr/> 62-68

Recommended Electives

Program Planning	REC 114	3
First Aid	REC 121	2
Food Study	FSN 113	3
Behavior Modification	PSY 104	3
Crisis Intervention	SSE 236	3
Drugs in American Society	SSE 115	3
Introduction to Social Welfare	SSE 133	3
Normal Personality	PSY 103	3
Introduction to Alcohol Abuse	SSE 116	3
Child Abuse Intervention and Protection	AJS 146	3
Understanding the Young Child	ECE 116	3
Conversational Spanish I	SPA 50	4
Fund. of Crime and Delinquency	AJS 260	3
Techniques for the Special Child	ECE 111	3
Defensive Tactics	AJS 012	2



Courses



**PIMA COMMUNITY COLLEGE DISTRICT
SUBJECT AREAS BY LOCATION***

SUBJECT AREAS		WEST CAMPUS	DOWN- TOWN CAMPUS	COMMUNITY CAMPUS	EAST EDUCATION CENTER
Accounting	ACC	X	X	X	X
Administration of Justice	AJS	X	X	X	X
Advertising Art	ADA		X		
Air Conditioning	ACD		X		
Anthropology	ANT	X	X	X	X
Art	ART	X			
Art for Personal Development	APD			X	
Astronomy	AST	X			
Automotive Technology	AUT		X		
Aviation Mechanics	AVM		X		
Biology (See Life Science: LSC)					
Business	BUS	X	X	X	X
Career Development	CDE	X	X		
Chemistry	CHM	X	X		
Computer Science	CSC	X	X	X	X
Cooperative Education (See Each Subject Area)					
Data Entry (See Computer Science: CSC)					
Dental Assisting	DAT	X			
Dental Laboratory Technology	DLT	X			
Design	DES	X			
Drafting	DFT	X	X		
Drama	DRA	X			
Early Childhood Education	ECE	X		X	X
Earth Sciences	ESC	X		X	
Ecology (See ESC 115 or LSC 115)					
Economics	ECO	X	X	X	X
Electronics	ETR	X	X	X	
Emergency Medical Technology	EMT	X		X	
Engineering	ENG	X	X		
English as a Second Language	ESL	X	X	X	X
Exploratory	EXP	X	X	X	
Fashion Design and Clothing	FDC	X		X	
Fast Food Industry	FFI		X		
Finance	FIN	X	X	X	
Fire Science	FSC	X			
Food Science and Nutrition	FSN	X	X	X	
French	FRE	X	X		
General Business	GEB	X	X	X	
General Machine Shop	GMC		X	X	
General Office Education	GOE	X	X	X	
General Technology	GTC		X	X	
Geography (See Earth Sciences: ESC)					
Geology (See Earth Sciences: ESC)					
German	GER	X			
Graphic Technology	GRA		X		
Graphics	GRC			X	
Health	HCA	X	X	X	X
Health Continuing Education	HCE	X	X	X	X
Health Education	HED	X	X	X	X

SUBJECT AREAS		WEST CAMPUS	DOWN- TOWN CAMPUS	COMMUNITY CAMPUS	EAST EDUCATION CENTER
History	HIS	X	X	X	X
Home Economics	HEC	X	X	X	X
Hotel/Motel Management	HMM	X	X	X	X
Housekeeping-Executive	HSK		X		
Humanities	HUM	X	X	X	X
Journalism	JRN	X	X		
Leisure Time	LTS	X		X	
Library Technology	LMT	X			
Life Sciences	LSC	X	X	X	X
Literature	LIT	X	X	X	X
Machine Tool Technology	MAC		X		
Management	MAN	X	X	X	X
Marketing	MKT	X	X	X	X
Mathematics	MTH	X	X	X	X
Media Technology	MET	X			
Military Science (Air Force)	MLA	X	X	X	
Military Science (Army)	MSC	X	X	X	
Music	MUS	X	X		
Nursing	NRS	X	X		
Office Education	OED	X	X	X	X
Ophthalmic Dispensing	ODT	X			
Papago	PGO	X			
Personal Development	PDP	X	X		
Philosophy	PHI	X	X	X	X
Photography (See ART)					
Physical Distribution	PYD		X		
Physical Education	PED	X			
Physics	PHY	X	X		
Political Science	POL	X	X	X	X
Professional Development	PRD		X	X	X
Psychology	PSY	X	X	X	X
Public Administration	PAD	X	X	X	
Public Building Maintenance	PBM			X	
Radiologic (X-Ray)					
Technology	RAD	X			
Reading	REA	X	X	X	X
Reading ALC	RDG	X	X		
Real Estate	RLS	X	X	X	X
Recreation	REC	X			
Religion, Comparative	REL	X			
Respiratory Therapy	RTH	X			
Secretarial (See Office Education: OED)					
Sheet Metal	SML		X		
Sign Language	SLG	X			
Social Services	SSE	X		X	
Sociology	SOC	X	X	X	X
Spanish	SPA	X	X	X	X
Special Education	SED	X			
Speech	SPE	X	X	X	X
Swahili	SWA	X			
Wastewater Technology	WWT		X		
Travel and Tourism Industry	TVL		X		
Welding	WLD		X		
Writing	WRT	X	X	X	X

*All courses in each subject area are not offered at each location. See Schedule of Classes for each semester for specific course offerings by location

COURSE NUMBERING SYSTEM AND PREREQUISITES

In general, courses numbered from 001–099 are those unique to the community college and are not anticipated to be transferable.

Courses numbered 100–199 generally have no prerequisite and are considered to be on the freshman level.

Courses numbered 200–299 may have prerequisites and may be considered to be on the sophomore level.

Sample Course Listing

ACC	101	Principles of Accounting	3 cr. hrs.	3 periods
course prefix	course number	course title	semester hours of credit	hours of lecture &/or lab per week

When total periods per week consist of lecture and laboratory periods, the number of each are designated in parentheses: 6 periods (3 lec., 3 lab).

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.

ACCOUNTING

ACC 50 Payroll and Applied Accounting Systems **3 cr. hrs./3 periods/3 lec.**

An evaluation and development of accounting systems for small businesses designed to meet reporting requirements for owners and governmental units. Study of payroll accounting, fringe benefits and payroll taxes.

ACC 101 Principles of Accounting I/3 cr. hrs./3 periods/3 lec.

This is an introduction to financial accounting with emphasis on the following: the communication of relevant financial information to external parties, the basic accounting model, the measurement processes involved, and the data classifications and technology which are essential to the interpretation and effective use of financial statements.

ACC 101 Principios de Contabilidad I/3 cr. hrs./3 periods/3 lec.

Este curso es una introducción a la Contabilidad Financiera con énfasis especialmente en: la comunicación de la información financiera relevante a los grupos interesados, el sistema básico de Contabilidad, el proceso de evaluación y la clasificación y terminología que son tan esenciales para la interpretación y uso efectivo de los estados financieros.

ACC 102 Principles of Accounting II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 101.

This is an introduction to managerial accounting. Course content provides management with the necessary criteria and tools for planning, directing day-to-day operations, and controlling. Topics include full cost, differential and responsibility accounting.

ACC 173 Accounting for Government Agencies **3 cr. hrs./3 periods/3 lec.**

Conventional accounting principles are combined with conventional fund accounting material to provide government and institution employees, having no accounting background, with some knowledge of what is going on in accounting in their offices.

ACC 201 Intermediate Accounting I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 102.

Study of accounting theory and practice applicable to current assets, fixed assets, liabilities, sources and application of funds. This course is for those who plan to specialize in accounting.

ACC 202 Intermediate Accounting II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 201.

Accounting theory and practice applicable to corporate net worth accounts, investments, reserves and income. This course is for those who plan to specialize in accounting.

ACC 203 Cost Accounting/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 102.

Interpretation, use and analysis of cost data for management planning, coordination and control; the application of theories and concepts which underlie cost accounting and budgeting.

ACC 204 Tax Accounting/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 101.

Course includes the study of personal income tax and tax on business operations.

ACC 299 Cooperative Accounting Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an accounting occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

ADMINISTRATION OF JUSTICE

AJS 12 Defensive Tactics/2 cr. hrs./2 periods/2 lec.

The theory of rough and tumble fighting, fundamentals and precautions, close-in defense and attack; control over an adversary; the armed and unarmed opponent; club maneuvers; prisoner handling and control; and physical fitness.

AJS 71 Patrol Procedures/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 101 or consent of instructor.

Patrol as one of the primary police operations; 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; application of laws on arrest, search and seizure.

**AJS 101 Introduction to Administration of Justice Systems
3 cr. hrs./3 periods/3 lec.**

The history and philosophy of administration of justice in America; recapitulation of the system; identifying the various sub-systems, role expectations, and their interrelationships; theories of crime, punishment and rehabilitation; ethics, education and training for professionalism in the system; career opportunities related to local criminal justice agencies.

AJS 106 Traffic Safety Functions—Vehicle Code/3 cr. hrs./3 periods/3 lec.

Traffic law enforcement and the policeman's role in overseeing the movement of vehicles and pedestrians. An introduction to the fundamentals of accident investigation and reporting, traffic court procedures, and public education for traffic safety against a background of Arizona law.

**AJS 146 Child Abuse Intervention and Protection
3 cr. hrs./3 periods/3 lec.**

This course includes the many definitions and forms of child abuse; recognition of its symptoms; family dysfunctions; the interaction with and counseling with the parental abuser; and the utilization of available community resources.

AJS 152 Beginning Marksmanship/1 cr. hr./2 periods (1 lec., 1 lab)

A lecture-lab course introducing students to firearms. Moral and legal aspects of firearms are emphasized along with firearms safety. Course includes range practice. (Same as Recreation 152.)

AJS 163 Introduction to Youth Care/3 cr. hrs./3 periods/3 lec.

Surveys the roles a youth care specialist plays in supervising and working with children in 24-hour care outside the home, including detention, residential facilities for youth and foster care.

AJS 172 Criminal Law I/3 cr. hrs./3 periods/3 lec.

The historical development and philosophy of law and constitutional provisions; 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 204 Criminal Investigation and Report Preparation/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 101 or consent of instructor.

Introduction to the fundamentals of modern criminal investigation; 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; report-writing requirements for administration and court use.

AJS 208 Police Administration/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 101 or consent of instructor.

An introduction to the principles of police organization, administration and service. All phases of police matters 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: AJS 101 (or concurrent enrollment) or consent of instructor.

The police officer's role in getting and maintaining public support is reviewed; also, the recognition and understanding of community problems, community action programs, methods of coping with crisis situations, ethnic and minority cultures, environments and police operations in relation to these.

AJS 212 Juvenile Justice Procedures/3 cr. hrs./3 periods/3 lec.

A study of the organization, functions and jurisdiction of juvenile agencies and courts; Arizona juvenile statutes, detention, court procedures and case disposition; custody and treatment of the offender; crime prevention methods and reporting procedures applicable to juvenile offenders.

AJS 214 Firearms/2 cr. hrs./4 periods(1 lec., 3 lab)

☐ Prerequisite: Student must be a law enforcement major with previous firearms training. Use of firearms, the moral aspects, legal provisions, safety precautions and restrictions; combat procedures for police, target analysis and range drill procedures. This course is taught on the range. Students must furnish their own pistols and ammunition.

AJS 216 Criminal Justice Procedures/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 101 or consent of instructor.

An in-depth study of the role and responsibilities of each segment within the administration of justice systems; law enforcement, judicial and corrections; a past, present and future exposure to each sub-system procedure from initial entry to final disposition; and the relationship each segment maintains with its system members.

AJS 218 Crime Scene Technology I—Fingerprinting/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 204 or consent of instructor.

A survey of technical terms used in fingerprinting, pattern interpretations, classification of fingerprints, searching and filing procedures. The student also learns procedures for taking fingerprints.

AJS 220 Organized Crime Investigation/3 cr. hrs./3 periods/3 lec.

A comprehensive historical and social evolutionary survey of organized crime with emphasis on its origin and its effect on the United States. The development of organized crime, its modus operandi, and its effect upon society are included.

AJS 240 Detention Supervision Methods/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Second year major in AJS or corrections, AJS 101 and/or consent of instructor.

An examination of institutional staff member functions with special emphasis on the correctional officer; plus a review of institutional procedures including reception, classification, program assignment, security and release procedures.

AJS 245 Institutional and Field Services/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 101 and/or consent of instructor.

The philosophy and history of correctional services; plus a survey of the correctional sub-systems or institutions by type and function, parole operations and community based services.

AJS 260 Fundamentals of Crime and Delinquency/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: PSY 100 or SOC 100 recommended.

Course surveys the nature and extent of crime and delinquency; theory and approaches to causation; prevention and treatment; and current problems of dealing with crime and delinquency as an attempt to understand man in relation to these.

AJS 272 Criminal Law II—Evidence/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 172 or consent of instructor.

The origin, development, philosophy and constitutional basis of evidence; constitutional and procedural considerations affecting arrest, search and seizure; degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights; and case studies.

AJS 273 Crime Scene Technology II—Physical Evidence/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 218 or consent of instructor.

Advanced procedures in the scientific identification of evidence, crime scene recording, collecting and preserving evidence; also casting and analysis of physical evidence.

AJS 276 Criminalistics—Evidence and the Laboratory/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 204 or consent of instructor.

A study and examination of the criminalistics field with concentration on the crime lab. Also a study of documents, ballistics, polygraphic techniques and comparative micrography.

AJS 277 Advanced Criminalistics/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: AJS 276 or consent of instructor.

Examined are the fields of firearms identification, pathology, toxicology, related matters and courtroom procedures.

AJS 290 Administration of Justice Field Experience/3 cr. hrs./15 periods(lab)

☐ Prerequisite: Consent of instructor.

Provides participation in community administration of justice agencies so students gain exposure to and experience in the practical application of classroom knowledge. Bi-weekly seminars are conducted to discuss theory and practice pertinent to the agency experience. Course may be taken two times for a maximum of six credit hours.

AJS 299 Cooperative Administration of Justice Training

3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a law enforcement occupation for a minimum of 16 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

ADVERTISING ART

ADA 101 Advertising Art I/3 cr. hrs./4 periods(3 lec., 1 lab)

Basic layout and production procedures for the various advertising mediums including: direct mail, newspaper ads, magazine ads, billboards, brochures, stationery and television. Also covered will be the history, objectives, structure and opportunities of advertising art.

ADA 103 Drawing and Composition/3 cr. hrs./5 periods(2 lec., 3 lab)

The basic essentials of light, shading, proportion, form and perspective are stressed. Students will learn to render products in a realistic manner using markers.

ADA 110 Advertising Design I/3 cr. hrs./5 periods(2 lec., 3 lab)

Layout of type for various advertising mediums using size, contrast, organization and color. Areas stressed are type rendering skills and the development of ideas using thumbnails, roughs and comprehensives.

ADA 111 Production Techniques and Processes I/3 cr. hrs./5 periods(2 lec., 3 lab)

Basic skills in preparing art work camera ready. Areas covered are inking, paste-up, typesetting, copy fitting, photo-sizing, photo-cropping, statmaking, overlay and dropout cutting.

ADA 120 Advertising Design II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 103, 110.

Combining products with type in the layout for various advertising mediums. Continued practice in type indication and the use of size, contrast, organization and color.

ADA 203 Advertising Drawing/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 103.

Proportions, light, shading, form and anatomy of the human figure are covered. Markers will be used.

ADA 205 Advertising Illustration/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 103, 203.

Advanced drawing, rendering and composition for industry and publications are covered. Rendering work is done in all media including ink, wash, air-brush, acrylics and markers.

ADA 210 Advertising Design III/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 120.

Layout and design of ads, brochures, billboards, stationery, logos, direct mail, menus, posters and television commercials are covered.

ADA 211 Production Techniques and Processes II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 111.

Continued practice and development of production skills including two color printing techniques. Students will design and produce brochures, posters, flyers and ads "camera ready."

ADA 212 Production Techniques and Processes III/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 211.

Continued practice and development of production skills including three and four color printing techniques.

ADA 220 Advertising Design IV/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ADA 103, 110, 111.

Course is project oriented and covers the advanced stages of drawing for black and white and colored media, plus the theory and practices of shading and shadows. Students learn to design for specific media as TV, billboard, magazine or newspaper.

ADA 299 Cooperative Advertising Art Training/3 cr. hrs./16 periods (1 lec., 15 lab)

A supervised cooperative work program for students in an advertising art occupation for a minimum of 16 hours per week. Course may be taken four times for a maximum of 12 credit hours (6 credit hours maximum for program requirements). Course objectives differ each semester.

AIR CONDITIONING**ACD 101 Air Conditioning Fundamentals/3 cr. hrs./3 periods/3 lec.**

Emphasis is on detail and specific treatment of air conditioning and problem solving techniques. Areas covered are psychrometry, ventilation, heating and cooling load calculations, dew point determination and precision measurement of air temperatures, quantities and velocities.

ACD 120 Air Conditioning Phase I/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: ACD 101 or concurrent with ACD 101, MTH 110.

Emphasis is on cooling and heating components and application; basic electricity; tools in heating and cooling maintenance; service and maintenance of electronic air cleaners and electronic humidifiers.

ACD 125 Air Conditioning Phase II/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: ACD 120.

Course covers the control of electrical circuits, use of electrical test instruments, troubleshooting of gas and electric cooling.

ACD 210 Air Conditioning Phase III/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: ACD 125.

Concentration is on light commercial equipment including gas-electric packages, heat pumps and three-phase power. Live equipment is used to teach service and repair work.

ACD 220 Air Conditioning Phase IV/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: ACD 210.

Stress is on the more complicated larger units including multi-zone and single-zone rooftop pieces of equipment, and controls on these units. Also included is an introduction to pneumatic controls as used on some models of equipment.

ACD 250 Air Conditioning Estimating I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 110.

The basic concepts of computing material costs from actual construction drawings through use of handbooks and formulas; pricing of all items associated with sheet metal products and air conditioning units.

ACD 260 Air Conditioning Estimating II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACD 250.

Bid preparation and procedures including material quantity, make-up sheets, equipment usage, manpower requirements, labor rates, amount of contract work, progress reports, material ordering procedures, overhead and profits.

ACD 270 Air Movement and Design/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: ACD 210, MTH 120, SML 110.

Residential area includes load calculation, duct sizing and equipment selection. Commercial area includes specialized types of equipment such as make-up air units and exhaust air.

ACD 299 Cooperative Air Conditioning Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an air conditioning occupation for a minimum of 16 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

ANTHROPOLOGY**ANT 100 Human Origins and Pre-history/3 cr. hrs./3 periods/3 lec.**

An exploration of the cultural and biological evolution of the human species from its earliest origins, based on our understanding of the archaeological and fossil record.

ANT 110 Introduction to Cultural Anthropology/3 cr. hrs./3 periods/3 lec.

A survey of cultural anthropology and linguistics; and an introduction to the comparative study of cultures. Emphasis is on non-literate cultures.

ANT 135 Pre-Columbian Art/3 cr. hrs./3 periods/3 lec.

A survey of the art of Pre-Columbian Mexico. Students will learn to recognize major art styles and important sites. Course includes a survey of the art of the same time period in Southeastern and Southwestern America, Central America, and Peru. (Same as ART-135 & HIS-135.)

ANT 136 Masks/3 cr. hrs./3 periods/3 lec.

A survey of traditional masks and sculpture of Africa, North and South America, Asia and Oceania. Major emphasis is on style, function and meaning of the masks of the Northwest Coast Indians and of the indigenous peoples of Africa and the South Pacific. (Same as ART-136 & HIS-136.)

ANT 140 Contemporary Indian Groups of the Southwest/3 cr. hrs./3 periods/3 lec.

A study of contemporary Indian cultures of the Southwest with emphasis on Arizona.

ANT 141 Archaeology of the Southwest/3 cr. hrs./5 periods(2 lec., 3 lab)

A survey of the archaeological heritage of the Southwest through its ancient settlements. Field trips are included.

ANT 144 The Mexican-American in Transition/3 cr. hrs./3 periods/3 lec.

What is it like to be a Mexican-American in today's society? Problems resulting from differences in cultures, values and needs are examined through class discussion and participation in related activities in the community.

ANT 145 Papago History and Culture/3 cr. hrs./3 periods/3 lec.

Where have the Papago people been, who are they, where are they, where are they going? In answering these questions, the class examines the history and culture of the Papago. (Same as History 145.)

**ANT 146 Culture and Personality of the Mexican-American
3 cr. hrs./3 periods/3 lec.**

A review of how the culture and personality of the Mexican-American differs from others and what it means to the individual.

ANT 148 History of Indians of North America/3 cr. hrs./3 periods/3 lec.

Origin and distribution of native populations of North America; and the historical development and interrelations of cultures. (Same as History 148.)

**ANT 149 History and Culture of the Mexican-American in the Southwest
3 cr. hrs./3 periods/3 lec.**

Who is the Mexican-American? What is his cultural heritage, and what has happened to it in the United States? (Same as History 149.)

ANT 150 Afro-American History and Peoples/3 cr. hrs./3 periods/3 lec.

What does the Afro-American have to face because he is a Black in American society? His past, present and future are examined. (Same as History 150.)

ANT 160 History and Peoples of Latin America/3 cr. hrs./3 periods/3 lec.

The history of Latin America from the pre-Columbian period to the present with emphasis on the evolution of nationalism through the struggles for economic, cultural, political and social freedoms. (Same as History 160.)

ANT 170 History and Peoples of Africa/3 cr. hrs./3 periods/3 lec.

A survey of the political and cultural history of Africa south of the Sahara. (Same as History 170.)

ANT 210 Cultural Anthropology/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ANT 110.

An in-depth exploration of methods used in studying and comparing cultures, with particular attention given to anthropological theory and methods. Selected topics will be pursued.

ANT 215 The Nature of Language/3 cr. hrs./3 periods/3 lec.

An introduction to the basic concepts of linguistics and their implications for the study of human culture.

ANT 220 Physical Anthropology/3 cr. hrs./3 periods/3 lec.

An in-depth inquiry into the origin, evolution and future of the human species. The course centers on a comprehensive study of human evolution including the topics of human variability, heredity and environment, mechanisms of evolution, race and racism, and non-human primates.

**ANT 223 The Anthropology of Music & Dance in Contemporary Society
3 cr. hrs./3 periods/3 lec.**

☐ Prerequisites: Sophomore standing and prior course work in the social sciences or consent of instructor.

An in-depth study of the diverse structure of American society focusing on the music (ethnomusicology) and dance styles (ethnochoreography) present in the subcultures of the Southwest.

ANT 225 Archaeology/3 cr. hrs./3 periods/3 lec.

The history of archaeological research plus a survey of the concepts and methods used for studying prehistoric cultures. Students also learn how archaeologists reconstruct human history from materials found in the field.

ANT 250 Archaeology Laboratory/3 cr. hrs./5 periods(2 lec., 3 lab)

Student receives laboratory experience in processing, preparation and analysis of excavated materials. Encouraged are student projects in such areas as display preparation and use of technical equipment.

ANT 275 Archaeological Field Methods/4 cr. hrs./8 periods(2 lec., 6 lab)

Techniques of archaeological survey, mapping, excavation and recording. Includes archaeological field experience in this area.

ANT 276 Archaeological Surveying/3 cr. hrs./9 periods/9 lab

☐ Prerequisites: ANT-275 or consent of instructor.

Techniques and methods for recognizing, locating and recording archaeological sites.

ANT 277 Advanced Archaeological Excavation/3 cr. hrs./7 periods(1 lec., 6 lab)

☐ Prerequisite: ANT 275 or consent of instructor.

Scientific excavation of an archaeological site. Emphasis is on excavation procedures, specialized field techniques and equipment, interpretation of sites and recording of archaeological information.

ANT 290 Individual Studies in Anthropology/1-3 cr. hrs./1-3 periods

☐ Prerequisite: ANT 100 or 110.

The student independently pursues his or her further development in anthropology with the help of a faculty member.

ART**ART 60 Principles of Lapidary/3 cr. hrs./3 periods(1 lec., 2 lab)**

A practical laboratory course in the identification, polishing and mounting of semi-precious materials. (Same as Earth Sciences 60.)

ART 100 Basic Design/3 cr. hrs./5 periods(2 lec., 3 lab)

An introductory art course to develop processes by which students can form their visual-perceptual approaches toward the elements of design.

ART 110 Drawing I/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

An introductory drawing course emphasizing visualization and techniques in representational drawing.

ART 115 Color and Design/3 cr. hrs./5 periods(2 lec., 3 lab)

An extension of design principles introduced in ART 100 with emphasis on color theory and relationships. Classroom projects utilizing various media are offered.

ART 120 Three-Dimensional Design/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

An extension of ART 100 into sculptural concepts and media. A study of volume, mass, and space relationships through modeling, casting, carving and construction.

ART 130 Art and Culture/3 cr. hrs./3 periods/3 lec.

Slide and lecture discussions of art forms from prehistoric art to the Renaissance. May be taken as a humanities elective.

ART 131 Art and Culture II/3 cr. hrs./3 periods/3 lec.

Slide and lecture discussions of art forms from the Renaissance to the Nineteenth Century. ART 130 is not a prerequisite to ART 131. May be taken as a humanities elective.

ART 132 Art of the 20th Century/3 cr. hrs./3 periods/3 lec.

A course in the appreciation of modern art forms via the art developments of the 19th and early 20th centuries. Perception of the development of abstract art through the unfolding of various thematic ideas and "schools" of art. May be taken as a humanities elective.

ART 135 Pre-Columbian Art/3 cr. hrs./3 periods/3 lec.

A survey of the art of pre-Columbian Mexico. Students will learn to recognize major art styles and important sites. Course includes a survey of the art of the same time period in Southeastern and Southwestern America, Central America, and Peru. (Same as ANT-135 and HIS-135.)

ART 136 Masks/3 cr. hrs./3 periods/3 lec.

A survey of traditional masks and sculpture of Africa, North and South America, Asia and Oceania. Major emphasis is on style, function and meaning of the masks of the North-west Coast Indians and of the indigenous peoples of Africa and the South Pacific. (Same as ANT-136 and HIS-136.)

ART 140 Photography I/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

An introduction to photography as an art form with a general inquiry into the nature of basic techniques in making silver images. Includes basic developing, printing, and enlarging. Aesthetic language of photography, perspective and what photography is as an art form. Individual and group work.

ART 141 Photography II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 140 or consent of instructor.

An extension of Beginning Photography as an art form. To use the medium with optimum creativity, technical skill, and visual finesse. Portfolio and book production, field trips and research.

ART 143 Commercial Photography/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 141.

Introduction to commercial fields in photography. The study and practice of business in the field of photography. Studio management, laboratory techniques, pricing schedules, record keeping, advertising, portraiture, weddings, industrial and aerial work.

ART 160 Ceramics I/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

An introduction to ceramics with a study of wheel and hand built forms. A basic study of glazing is included.

ART 170 Metalwork/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

An exploration of the basic techniques and design approaches used in the fabrication of jewelry and other metalwork. Includes construction, casting, forming, surface embellishment, etc.

**ART 179 Weaving I: Back-strap and Tapestry Looms
3 cr. hrs./5 periods(2 lec., 3 lab)**

☐ Prerequisite: ART 100 or concurrent enrollment.

The student will build her/his own loom and use it to explore weaving as an art form. Emphasis will be on a variety of tapestry weaves and strip weaving.

ART 180 Weaving I: 4-Harness Loom/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

Explore the unique capabilities of the four-harness loom as an art medium. Projects will involve color, texture, pattern; using tabby, twill, tubular, and tapestry weaves.

ART 181 Fiber Structures/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 or concurrent enrollment.

Explore fiber as an art medium. Develop skills in techniques such as paper-making, basketry, crochet, plaiting and macrame. Projects will involve sculptural form as well as two-dimensional design.

ART 190 Leatherwork/3 cr. hrs./5 periods(2 lec., 3 lab)

Provides an understanding of various properties of leathers and the development of skills in the use of basic leatherworking tools. Projects are selected to meet individual interests and levels of skill development.

ART 210 Drawing II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 110.

Continued study of graphic media in two dimensions with emphasis on various techniques and materials.

ART 212 Printmaking/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 110 or consent of instructor.

A study of print-making processes such as silk screen, etching, block printing, and monotypes: students may choose to work in areas of particular interest.

ART 213 Life Drawing/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100 and 110 recommended.

Proficiency is stressed in drawing the human figure, using the two dimension concept, as a graphic vehicle of expression. Students have opportunities of working in various media.

ART 214 Printmaking II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100, 110, 212.

A continuation of Printmaking I, ART 212.

Advanced problems in intaglio, etching, monotypes and block printing processes.

ART 215 Painting/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 110 and 115 recommended.

A studio course dealing with basic painting techniques and processes.

ART 216 Silkscreen/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 100, 110 or instructor's permission.

An introductory course in screen printing: screen construction, the use of cut film, stencil making techniques and printing techniques. One-color and multi-color process work.

ART 220 Sculpture/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 120 or consent of instructor.

A course exploring a range of approaches and materials. Materials may include plaster, clay, cement, welded steel, metal framing, stone, wood, plastic, lost wax casting, or mixed media.

ART 230 History of Photography/3 cr. hrs./3 periods/3 lec.

An intensive survey into the history of photography as an art form. Its relationship to the other arts and to society. A study of the search, and development of the technical aspects of photography. A survey of the styles and movements from 1839 to contemporary schools. Research of important photographers.

ART 231 History, Philosophy, Psychology of Art and Design/3 cr. hrs./3 periods

A study of particular movements, periods, ideas and problems in art and design are arranged each semester by separate sections or for individual study according to need.

ART 260 Ceramics II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ART 160 or consent of instructor.

Further development of wheel and hand built forms as well as glazes and color blends.

ART 261 Ceramics III/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisites: ART 160, 260.

Advanced study for students who demonstrate mastery of skills and principles taught in Ceramics I and II. Study includes clay composition, glaze calculations and advanced design problems.

ART 270 Metalwork II: Jewelry/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisites: ART 100, ART 170.

Intermediate course dealing primarily with jewelry design. Techniques covered include casting, construction, cold forging, and stone setting in precious and non-precious metals.

ART 271 Metalwork II: Smithing & Casting/3 cr. hrs./5 periods(2 lec., 3 lab)

□ Prerequisites: ART 100, ART 170.

Intermediate course dealing primarily with the design of aesthetic and functional objects. Emphasis on hot and cold forging, raising, forming, and casting using various metals including copper, silver, bronze, steel, iron & aluminum.

ART 299 Cooperative Art Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an art occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

ART FOR PERSONAL DEVELOPMENT**APD 10-53 Art for Personal Development/2 cr. hrs./4 periods(1 lec., 3 lab)**

A series of non-transfer workshop courses designed to develop skill in various media.

APD 10 Drawing

APD 12 Photography

APD 13 Advanced Photography

APD 14 Oil Painting

APD 16 Water Color Painting

APD 019 Calligraphy II/2 cr. hrs./4 periods(1 lec., 3 lab)

This course teaches the student advanced techniques of the classic art of lettering, illumination and decoration of manuscripts.

APD 20 Ceramics

APD 22 Weaving

APD 24 Sculpture

APD 26 Silversmithing

APD 40 Introduccion A La Escultura (Introduction to Sculpture)

APD 41 La Pintura Mural En Mexico (Mural Painting in Mexico)

APD 42 Pasteleria Creativa I (Creative Baking I)

APD 43 Pasteleria Creativa II (Creative Baking II)

APD 50 Musica Para Gozar (Music for Everyone)

APD 51 Musica de Mariachi (Mariachi Music)

APD 52 Baile Espanol I (Spanish Dance I)

APD 53 Baile Espanol II (Spanish Dance II)

APD 056 Introduction To The Mexican Charrería/2 cr. hrs./4 periods(1 lec., 3 lab)

An introduction to the historical, social, and cultural background of the Mexican charrería. Course also encompasses aspects of the lifestyle of the charro and his family.

APD 056 Introducción a la charrería mexicana/2 cr. hrs./4 periods(1 lec., 3 lab)

Una introducción al fondo histórico, social y cultural de la charrería mexicana. El curso también abarca los aspectos de la vida del charro y su familia.

APD 057 The Events of The Mexican Charreada/2 cr. hrs./4 periods(1 lec., 3 lab)

The different (or various) aspects of the charreada are introduced in a manner that the student will learn to appreciate the events. Additionally, rules and regulations for the purpose of judging a charro event are covered.

APD 057 Las competencias charras/2 cr. hrs./4 periods(1 lec., 3 lab)

Dos diferentes aspectos de la charrería son presentados en una forma que los estudiantes aprenderán a apreciar los eventos. Además se cubrirán los reglamentos para calificar un evento charro.

ASTRONOMY**AST 101 Introduction to Astronomy I/3 cr. hrs./3 periods/3 lec.***

A descriptive introduction to the science of astronomy covering observational and historical aspects and also astronomical tools. Special emphasis on the solar system.

AST 102 Introduction to Astronomy II/3 cr. hrs./3 periods/3 lec.*

Continuing an introductory description of astronomy with special emphasis on stars and stellar properties, galaxies, cosmology and current theories.

*AST 101 and AST 102 may be taken as a lecture course only by general interest students. Students taking astronomy for the Liberal Arts science requirement should take both lecture and laboratory.

AST 111 Introduction to Astronomy I Laboratory/1 cr. hr./3 periods/3 lab

Laboratory for AST 101.

AUTOMOTIVE TECHNOLOGY

AUT 101 Automotive Maintenance/2 cr. hrs./3 periods(1 lec., 2 lab)

For those who have little or no automotive service experience. Covered are the proper techniques of routine vehicle maintenance.

AUT 101 Mantenimiento de Automóviles/2 cr. hrs./3 periods(1 lec., 2 lab)

Para el estudiante que no tiene ningún conocimiento o que tiene conocimientos limitados del mantenimiento de automóviles. Se enseñan las técnicas más convenientes para el mantenimiento rutinario del vehículo.

AUT 111 Automotive Body and Fender Repair/3 cr. hrs./4 periods(2 lec., 2 lab)

The fundamentals of sheet metal repair, using basic metal-working tools. Instruction is limited to minor damage repair, parts replacement and alignment.

AUT 120 Internal Combustion Engines/4 cr. hrs./5 periods(3 lec., 2 lab)

Construction, design, operation principles, diagnosis procedures and common repairs of modern internal combustion engines. Stress is on the interrelationship of various engine systems.

AUT 122 Automotive Engine Service Repair/3 cr. hrs./5 periods(2 lec., 3 lab)

□ Prerequisite: AUT 120.

Students learn procedures for removing and replacing camshafts, crankshafts, timing chains, insert bearings, piston rings and short blocks, as well as the procedures for valve grinding at the job entry level as part of the certificate program in Automotive Engine Repair.

AUT 124 Automotive Diesel Engines/3 cr. hrs./5 periods(1 lec., 4 lab)

□ Prerequisite: AUT 120 or equivalent.

Tune-up diagnosis, fuels, lubrication, and cooling of automotive diesel engines.

AUT 125 Automotive Engine Tune-Up/4 cr. hrs./5 periods(3 lec., 2 lab)

□ Prerequisite: AUT 120 and 128; AUT 128 may be taken concurrently.

The interpretation and application of electric test equipment results to maintain engine efficiency and exhaust emission. Proper tune-up procedures are stressed.

AUT 128 Automotive Electricity I/3 cr. hrs./4 periods(2 lec., 2 lab)

The fundamentals of electricity and electrical circuits as applied to the automobile.

AUT 129 Automotive Electricity II/3 cr. hrs./4 periods(2 lec., 2 lab)

□ Prerequisite: AUT 128.

Diagnosis and repair of automotive electrical systems using modern diagnostic equipment.

AUT 132 Automatic Transmission Removal and Replacement 4 cr. hrs./5 periods(3 lec., 2 lab)

Students learn in-car repairs, adjustments, transmission removal and replacement, and tear-down of automatic transmissions in popular use today with factory flat-rate time and to factory specifications. This course is part of the basic certificate program in power transmissions for job entry.

AUT 133 Automatic Transmission Rebuilding/4 cr. hrs./5 periods(3 lec., 2 lab)

This course is designed around the duties of an automatic transmission builder. Students learn the duties of a builder by overhauling automatic transmissions in popular use today within a specified length of time. These transmissions then are tested against factory specifications. This course is part of the power transmissions basic certificate program for job entry.

AUT 136 Automotive Drive Line/4 cr. hrs./5 periods(3 lec., 2 lab)

The construction, operation, diagnosis and repair of manual shift transmissions, clutches, universal joints and differentials.

AUT 138 Automotive Chassis/4 cr. hrs./5 periods(3 lec., 2 lab)

Front wheel alignment, wheel balancing, suspension overhaul, manual and power steering gears.

AUT 140 Automotive Brakes/4 cr. hrs./5 periods(3 lec., 2 lab)

The diagnosis and repair of automotive brakes. Includes hydraulic systems, drum and disc brakes and power brakes.

AUT 142 Automotive Air Conditioning/3 cr. hrs./4 periods(2 lec., 2 lab)

Fundamentals of refrigeration and automotive application of refrigeration. Stressed are system operation and diagnosis.

AUT 200 Performance Engines/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Second year level in automotive program or proven ability to diagnose and repair standard vehicles; sound math background is helpful.

Engine design theory and construction, and modifications used to improve power output. Course also covers related drive train and suspension and suspension modifications necessitated by increased power.

AUT 299 Cooperative Automotive Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an automotive occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

AVIATION MECHANICS**AVM 88 Preventive Maintenance for Pilots/3 cr. hrs./3 periods/3 lec.**

Topics include engine design and function, aircraft design and function, safety aspects in the operation of aircraft, federal aviation regulations, and an examination of the industry.

AVM 220 Airframe Mechanics/6 cr. hrs./6 periods/6 lec.

☐ Prerequisite: 30 months' experience concurrently performing the duties of airframe and powerplant maintenance; or 18 months of experience performing the duties appropriate to this rating.

Covered are aircraft rigging, weight and balance, woodwork, welding, fabric coverings, sheet metal, hydraulics, aircraft electrical systems, environmental systems, instrumentation and federal aviation regulations.

AVM 230 Powerplant Mechanics/5 cr. hrs./6 periods(5 lec., 1 lab)

☐ Prerequisite: 30 months' experience concurrently performing the duties of airframe and powerplant maintenance; or 18 months performing the duties appropriate to this rating.

Reciprocating and jet engine design and function, electrical systems, fuel systems, induction systems, lubrication systems and propellers.

BUSINESS**BUS 050 Fundamentals of Tax Preparation/3 cr. hrs./3 periods/3 lec.**

An introductory course in the preparation of the 1040A and 1040. Includes all the schedules, child care, credit for the itemized deductions. Upon completion of the course, the student has the opportunity to work with the VITA program. The course and their volunteer income tax assistance are administered by the I.R.S.

BUS 051 Mathematics of Business/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 60.

Basic mathematical procedures are applied to business problems. Includes mark-up, payroll, simple and compound interest.

BUS 100 Introduction to Business/3 cr. hrs./3 periods/3 lec.

A survey of fundamental characteristics and functions of modern business involving business principles, marketing, record keeping and risks; and a historical review of business development including the viewpoint of various ethnic groups.

BUS 200 Business Law I/3 cr. hrs./3 periods/3 lec.

Covered are such legal topics as the nature and sources of business law, the judicial system, law of contracts, torts, agency, consumer credit protection and sales.

BUS 201 Business Law II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: BUS 200.

A continuation of BUS 200 covering such legal topics as the law of personal property, real property, partnerships, corporations, government regulation of business, and environmental law.

**BUS 205 Statistical Methods in Economics and Business I
3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: MTH 170 or concurrent enrollment.

Introduces student to statistical techniques and their application to economic business decision making. Covers data structures, frequency distributions, linear regression, probability and probability distributions, and sampling.

BUS 206 Statistical Methods in Economics and Business II
3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: BUS 205.

Continuation of BUS 205. Covers the testing of hypotheses, Chi-Square distributions, analysis of variance, regression and correlation, non-parametric statistics, sample survey methodology, and Bayesian inference.

CHEMISTRY

CHM 101 Introductory Chemistry I/4 cr. hrs./6 periods(3 lec., 3 lab)

Basic chemistry and its relationship to everyday experiences; classification and structure of matter along with basic principles of chemical reactions and their environmental and societal impacts. Designed to meet the needs and interests of non-science majors.

CHM 102 Introductory Chemistry II/4 cr. hrs./6 periods(3 lec., 3 lab)

Continuation of CHM 101. Organic chemistry as it relates to consumer products and pollution of our environment; biochemistry and physiochemistry and their relationship to medicines, drugs, health and food products.

CHM 110 Fundamentals of Chemistry I/4 cr. hrs./6 periods(3 lec., 3 lab)

The classification, structure and general chemical behavior of inorganic matter as a basis for the study of some life processes. Adapted to the needs of nursing and other allied health programs.

CHM 111 Fundamentals of Chemistry II/4 cr. hrs./6 periods(3 lec., 3 lab)

The classification, structure and general chemical behavior of organic biochemical systems as a basis for the study of some important life processes. Adapted to the needs of nursing and other allied health programs.

CHM 112 Chemistry for Education Majors/3 cr. hrs./5 periods(2 lec., 3 lab)

The study of basic concepts in chemistry and their applications. For elementary, early childhood and special education majors.

CHM 120 General Chemistry I/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: MTH 130 or consent of instructor.

This course includes a development of atomic structure and bonding with some historical input, fundamental chemical and scientific relationships, chemical reactions and energy, states of matter and solutions.

CHM 121 General Chemistry II/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: CHM 120.

A continuation of CHM 120 with emphasis on certain chemical concepts such as equilibrium, kinetics, acids and bases, complexions and oxidation-reduction.

CHM 196 Independent Studies in Chemistry/1-4 cr. hrs./3-12 periods(lab).

Laboratory projects varying with students' interests and reasons for enrolling.

CHM 240 Organic Chemistry I/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: CHM 121 or consent of instructor.

An integrated course in the fundamentals of organic chemistry covering classification, occurrence, synthesis, analysis and reaction mechanisms of important classes of organic compounds. Alkanes, Alkenes, Aromatics and Arenes are classes stressed in the first semester.

CHM 241 Organic Chemistry II/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: CHM 240 or consent of instructor.

A continuation of CHM 240 with emphasis shifting to synthesis, and the use of instrumentation as a means of identification. The remaining classes or organic compounds are discussed.

CHM 299 Cooperative Chemistry Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a chemistry occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.



CHILD DEVELOPMENT ASSOCIATE PROGRAM

CDA 120 Environmental Design for The Early Childhood Learning Center

3 cr. hrs./3 periods/3 lec.

This course will prepare the student to plan and arrange an efficient early childhood training center, allowing for active and quiet child activities to occur simultaneously, providing a wide variety of stimulating materials to the children, and allowing a variety of adult and child interactions.

CDA 121 Planning the Early Childhood Program/3 cr. hrs./3 periods/3 lec.

This course will prepare the student with the skills needed to adequately plan a center-based early childhood program for 15–25 children.

CDA 122 Observing Young Children/3 cr. hrs./3 periods/3 lec.

This course will provide the student with skills necessary for effective involvement of characteristics and behaviors in an early childhood learning center, and with procedures for comparing recorded observations with recognized developmental norms.

CDA 123 The Family and Early Childhood Education/3 cr. hrs./3 periods/3 lec.

This course will provide the student with skills necessary for effective involvement of parents in the early childhood learning program. Covered topics include: communicating with parents; understanding parents' values for their children; recognizing the family as a prime educator.

CDA 124 Enhancing Intellectual Development in the Early Childhood Setting I

3 cr. hrs./3 periods/3 lec.

This course will involve the student in exploration and development of practical knowledge in the following areas: 1) Language Development; 2) Developing Number Concepts; 3) Developing Science Concepts; 4) Cooking & Nutrition Education; 5) Enhancing Questioning & Problem-Solving Abilities; 6) Field Trips.

CDA 125 Enhancing Intellectual Development in the Early Childhood Setting II

3 cr. hrs./3 periods/3 lec.

This course will involve the student in exploration and development of practical knowledge in the following areas: 1) Language Development; 2) Developing Number Concepts; 3) Developing Science Concepts; 4) Cooking & Nutrition Education; 5) Enhancing Questioning & Problem-Solving Abilities; 6) Field Trips.

CDA 126 Enhancing Personality Development in the Early Childhood Setting

3 cr. hrs./3 periods/3 lec.

This course will provide the student with skills necessary for observing and identifying problems of negative self-image, and working toward the development of a positive identity for each child. Other topics include: providing for individual differences within the early childhood center; encouraging open expression of feelings.

CDA 220 Creative Expression in the Early Childhood Setting

3 cr. hrs./3 periods/3 lec.

This course will provide the student with skills and knowledge required to encourage the development of creative expression by children in an early childhood setting. The course will cover music and dance, dramatic play, and creative media.

CDA 221 Enhancing Physical Development in the Early Childhood Setting

3 cr. hrs./3 periods/3 lec.

This course will provide the student with the required background knowledge and with a variety of techniques and ideas for enhancing the development of children's fine and gross motor abilities, and the physical development of the whole child.

CDA 222 Meeting Special Language & Cultural Needs of Children in Groups

3 cr. hrs./3 periods/3 lec.

This course will provide the student with specific knowledge and techniques for developing a bilingual program and for incorporating important elements of the culture of the children the student is working with in a classroom setting. The course content will be language and culture-specific for the ethnic group the student is working with.

CDA 223 Crafts in the Early Childhood Setting/3 cr. hrs./3 periods/3 lec.

This course will provide the student with knowledge of and experience with a variety of crafts media and projects suitable for the early childhood setting. Topics include: wood-working, sewing, clay, and using found objects.

CDA 224 Management Functions in the Operation/3 cr. hrs./3 periods/3 lec.

This course will provide the student with the skills necessary to keep an early childhood learning center functioning smoothly. This would include ordering and inventorying supplies, utilizing community resources, and participating in program evaluation. This course will include material specific to the early childhood program by which the student is employed.

COMPUTER SCIENCE**CSC 100 Introduction to Computers/3 cr. hrs./4 periods(3 lec., 1 lab)**

Establishes the relationship of computer to data processing. Introduces concepts of computer configurations, stored program, flow charting, block diagramming and documentation. Problems are programmed in basic language.

CSC 105 Survey of Data Processing/3 cr. hrs./3 periods/3 lec.

A history and overview of data processing with emphasis on the use of computers as tools and their applications in business, industry, social and natural sciences. Students are introduced to at least one computer language and are acquainted with the social impact of man's relationships to computers. Not for programming or engineering majors.

CSC 110 Data Entry and Procedures/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: Some typing ability needed; speed not essential.

Entering and verifying simulated production data from several types of source documents utilizing buffered devices and key punch machines. Emphasis on low error rate production.

CSC 115 Advanced Data Entry/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: CSC 110.

Advanced training at the job entry level in the operation of data entry devices and in related job functions. Emphasis on high volume and low error rate production.

CSC 140 Fortran IV Programming/3 cr. hrs./4 periods(2 lec., 2 lab)

Application of programming to the numerical solution of problems. Includes flow charting, block diagramming, documentation and writing of programs. Problems are suited to business, engineering or math, depending upon students' objectives.

CSC 150 Introduction to Computer Operations/3 cr. hrs./4 periods(3 lec., 1 lab)

Instructions and lab experience in computer operations covering tape, disk, printer, reader, console and terminals. Operating systems, time-sharing, file organization, utilities, text editors and multiprogramming concepts are stressed.

CSC 155 Advanced Computer Operations/3 cr. hrs./4 periods(3 lec., 1 lab)

A study of advanced operator service programs, job control language, privileged utilities, systems errors and recovery procedures. System start-ups, restarts, and reconfiguration are included. Hands-on operation required.

CSC 160 COBOL Programming/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: CSC 100 or consent of instructor.

Comprehensive study and practice of writing programs in COBOL, standard business language. Proper documentation and programming standards are included as are programming techniques to utilize auxiliary storage devices.

CSC 170 RPG Programming/3 cr. hrs./4 periods(2 lec., 2 lab)

☐ Prerequisite: CSC 100 or consent of instructor.

Students are introduced to the solutions of business oriented problems through writing and execution of Report Program Generator Programs. RPG is the primary language of most small scale computers.

CSC 195 Job Entry Procedures/1 cr. hr./1 period/1 lec.

Applying for employment, letter and resume writing, interviewing and related topics.

CSC 196 Work Standards and Job Attitudes/1 cr. hr./1 period/1 lec.

Includes ethics, work relationships and human relations using role playing.

CSC 197 Key Punch for Programmers and Operators/1 cr. hr./1 period/1 lec.

Students learn the keyboard, functions of special keys, use of program drum cards to punch programs, and procedures to correct error cards.

CSC 198 Data Processing Projects I/2 cr. hrs./6 periods/6 lab

☐ Prerequisite: Consent of instructor.

Credit is given for practical work experience on assigned data processing projects in data entry, controls and operations.

CSC 250 Microprocessor Fundamentals/3 cr. hrs./4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 100 or permission of instructor.

Simple microprocessors will be used as a vehicle to teach the basic concepts of computer architecture, machine language programming, assembly programming, input/output, and console operations.

CSC 255 Microprocessor Applications/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: CSC 250.

Comparison of the architecture and features of available microprocessors. Use of microprocessors to monitor and control physical processes, displays, lights, switches, instruments, etc.

CSC 260 Advanced COBOL and File Mangement/4 cr. hrs./6 periods(4 lec., 2 lab)

☐ Prerequisite: CSC 160.

Advanced COBOL programming techniques and languages are thoroughly explored. Report writer, sort verbs, file organization, debugging aids and interaction with the operating system are included.

CSC 270 IBM/370 Assembly Language/4 cr. hrs./6 periods(4 lec., 2 lab)

☐ Prerequisite: CSC 250 or consent of instructor.

CSC 274 MACRO-10 Assembly Language/4 cr. hrs./6 periods(4 lec., 2 lab)

☐ Prerequisite: CSC 260, 270, or consent of instructor.

A study of fixed word machine language formats with emphasis on binary arithmetic instructions, variations of logical and control instructions and word-bit-byte manipulations. File creation using sequential and random organizations also are covered. Students, in addition, use interactive terminal input/output, conversing with a DEC-10 to test their programs, and various debugging techniques.

**CSC 275 Advanced Programming and File Handling
4 cr. hrs./6 periods(4 lec., 2 lab)**

☐ Prerequisite: CSC 160 and CSC 170.

Advanced programming and file handling techniques using small business computer languages are emphasized, which includes hands-on experience with an appropriate machine.

CSC 280 Systems Analysis/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: CSC 160 or consent of instructor.

Tools of systems analysis to be covered include documentation methods (systems flow-chart, decision table, etc.), user communication, record layout, code design, file design (batch and on-line data base concepts), documentation design (source and printed output). Selected business systems applications are used to apply the above tools.

CSC 281 Systems Design/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: CSC 280.

Application of the tools of systems analysis covered in CSC 280 are used to design a total system. The case study approach is used. A feasibility study is prepared to present alternatives or a systems proposal is prepared to recommend a course of action.

CSC 290 Systems Programming Theory/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: CSC 274 or consent of instructor.

The writing of compilers, operating systems and utility programs. Sorting and timing techniques included.

CSC 294 Current Topics in Computer Science/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: CSC 274, 281 or consent of instructor.

Covered are selected topics which reflect the most current technological and systems software concepts in the field of computer science. Topics such as teleprocessing, data base concepts, structured programming and mini-computers may be covered.

CSC 296 Operating Systems/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: CSC 270, 274, or consent of instructor.

A study of the design and functions of a computer's operating system. Emphasizes system generation as affected by computer size, configuration, needed library routines and macros. Students work through an actual generation of an operating system.

CSC 298 Data Processing Projects II/3 cr. hrs./4 periods(2 lec., 2 lab)

☐ Prerequisite: Consent of instructor.

Students are assigned to selected projects at computer installations in the community. Instruction and practice is provided in: preparing project proposals; project management; interface with potential users of a system; design, programming, implementation and documentation of a project.

CSC 299 Cooperative Computer Science Training 3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a computer science occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

DENTAL ASSISTING

DAT 61 Introduction to Dental Assisting/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Consent of program coordinator.

Knowledge of basic science as it relates to dentistry, oral pathology, and microbiology.

DAT 62 Dental Assisting I/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.

Provides the student with knowledge of morphology of the human dentition; dental instruments and their use in various operative procedures.

DAT 63 Oral Radiography/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.

Students learn the importance of dental roentgenography as a diagnostic aid; develop knowledge of safety factors when exposing radiograms; learn to expose, process, mount, label and file radiographs; and learn to recognize radiographs that are acceptable for diagnosis.

DAT 64 Dental Materials/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.

Course enables students to understand the chemical and physical properties of dental materials; the use of materials in specific operative procedures; units of measure and use of various measuring devices; use and maintenance of all related equipment.

DAT 65 Pre-Clinical/2 cr. hrs./6 periods/6 lab

☐ Prerequisite: Consent of program coordinator.

The basic procedures of chairside assisting in general and specialty dental practices are studied and performed.

DAT 66 Dental Assisting II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of DAT 61 through 65.

Students learn to administer first aid in emergency situations; knowledge of drugs used in dentistry; nutrition and how it affects total dental health.

DAT 67 Dental Assisting III/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of DAT 61 through 65.

Provides the student with a knowledge of the business duties in a dental office and the various skills as collections, budget and financing, insurance and patient routines.

DAT 68 Clinical Procedures/8 cr. hrs./24 periods/24 lab

☐ Prerequisite: Satisfactory completion of DAT 61 through 65.

Students apply acquired skills in clinical affiliation under direct supervision of the dentist and instructor.

DENTAL LABORATORY TECHNOLOGY

DLT 101 Dental Morphology/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Consent of coordinator.

A study of the development of teeth, including the outlines of hard, bony and soft areas of the jaws, as related to denture construction. Stress is 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 Non-Metallic Dental Materials/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Consent of coordinator.

A study of the 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./12 periods(lab)

☐ Prerequisite: Consent of coordinator.

Course provides a complete understanding 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 in methyl-methacrylate acrylic.

DLT 104 Dental Laboratory I/3 cr. hrs./5 periods(2 lec., 3 lab)

□ Prerequisite: DLT 101, 102, 103.

A study of the chemistry and metallurgy of dental alloys, the compositions of plating solutions and principles of electro-plating. Wrought metal bars and clasps, as related to laboratory procedure, are discussed and analyzed. Required will be a full complement of teeth carved from plaster blocks, and a full complement of natural size teeth sculptured from wax ivory blocks, set up to occlusion.

DLT 105 Partial Dentures Reconstruction/4 cr. hrs./12 periods(lab)

□ Prerequisite: DLT 101, 102, 103.

Construction of wrought metal lingual bars and clasps; investing and soldering techniques of bilateral appliances; processing partial dentures in acrylic in three techniques—the bank, the split and the carry-over; fabrication of dies of inlays and abutments; repair, relines and reconstruction of dentures.

DLT 201 Dental Laboratory II/3 cr. hrs./5 periods(2 lec., 3 lab)

□ Prerequisite: Satisfactory completion of first year courses.

Principles of fixed bridgework, abutments, inlays and crowns; the theory of spanning spaces with various types of artificial teeth in complete fixed and cantilever bridgework; the importance of stress, function and aesthetics in the design of fixed bridgework; the handling of wax patterns, investments, casting techniques, making of dies from impressions; techniques in waxing, investing, casting of inlays, three-quarter crown, full crown and veneers. Tooth carvings taught in previous semester are used.

DLT 202 Dental Metallurgy I/3 cr. hrs./3 periods/3 lec.

□ Prerequisite: Satisfactory completion of first year courses.

A study of precious metals used by the dental technician. Topics include 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./12 periods(lab)

□ Prerequisite: Satisfactory completion of first year courses.

Waxing, investing and finishing of simple and complex inlays, full crowns, veneers and three-quarter crowns; 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: DLT 201, 202, 203.

The principles of surveying, the design of cast partials, and the technical applications of metallurgy and engineering principles; the composition and physical properties of gold and chrom-cobalt alloys and their working qualities. All types of known designs and principles of retention are used in the construction of removable bridgework.

DLT 205 Dental Metallurgy II/4 cr. hrs./8 periods(2 lec., 6 lab)

□ Prerequisite: DLT 201, 202, 203.

A study of cast gold alloys, abnormal castings, base metal casting alloys used by the technician, and metallographic techniques. Skills are developed in casting gold and non-ferrous metals. Upper and lower partial frame structures will be constructed in cast gold and cast chrom-cobalt alloy.

DLT 206 Ceramics/2 cr. hrs./6 periods(lab)

□ Prerequisite: DLT 201, 202, 203.

Skills are developed in porcelain and porcelain on gold techniques with emphasis placed on low and high fusing porcelains, their vitrification, control of form, control of color, design of metal structure, and application of stain and glaze. Composition and physical properties, as well as the fundamentals of manipulating porcelain and gold are discussed and demonstrated.

DESIGN**DES 111 Industrial Graphics/3 cr. hrs./4 periods(3 lec., 1 lab)**

Course concentrates on the representation of products, equipment and exteriors/interiors through shaded and line drawings in several media.

DES 150 Functional Design/3 cr. hrs./4 periods(3 lec., 1 lab)

Designs of objects and systems are studied and solutions then developed to satisfy the problems encountered. Students select their own area of design interest.

DES 151 Light-Weight Structure Design/3 cr. hrs./4 periods(3 lec., 1 lab)

Study of design concepts and application of various types of practical and inexpensive methods of shelter, including domes, pre-stressed membranes, inflatables and other innovative types of shelter.

DES 155 Home Furnishings/3 cr. hrs./3 periods/3 lec.

The study of furnishings both in the functional sense and with respect to social, aesthetic, economic and psychological effects on individuals.

DES 156 Design for Living/3 cr. hrs./3 periods/3 lec.

A study of the basic principles of functional interior design and their application. This course is designed for the career oriented interior design student as well as the student who wishes to decorate his or her own surroundings.

DES 211 Commercial Graphics/3 cr. hrs./4 periods(3 lec., 1 lab)

Offers training in composition, layout, typography, color selection and design of logos, catalogs and brochures. Emphasis is on preparation for the advertising and graphics industry.

DES 250 Industrial Functional Design/3 cr. hrs./4 periods(3 lec., 1 lab)

An extended study of design with emphasis on solutions to problems in fabrication and reproducibility of various products.

DES 255 Spatial Design/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: DES 156.

A further study of the principles of functioning interior design and the application of these principles. For the serious interior design student.

DES 256 Interior Environmental Design/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: DES 255.

Advanced theory and practice of interior design. Course deals with needs of the student seeking career preparation in interior design; customer-client relationships and financial problems. Custom and built-in furnishings are studied as well as home entertainment equipment.

DES 280 Applied Design/3 cr. hrs./11 periods(1 lec., 10 lab)

☐ Prerequisite: Consent of Instructor.

Students will gain firsthand experience in interior or functional design.

DES 299 Coop. Design Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in design occupations for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

DRAFTING**DFT 110 Construction Drafting I/4 cr. hrs./6 periods(3 lec., 3 lab)**

An introduction to drafting and blueprint reading. Plot plans, floor plans, elevations, sections, details, and structural plans are involved in developing an understanding of construction drawings and drafting techniques.

DFT 112 Fundamentals of Electro-Mechanical Blueprint Reading/3 cr. hrs./3 periods/3 lec.

A blueprint reading course involving many areas of trade and industry including industrial electricity, electronics, industrial controls (including logic circuits), piping drawings, fluid power, pneumatics, hydraulics and electro-mechanical devices.

DFT 114-115 Construction Determinants I, II/3-3 cr. hrs./3 periods/3 lec.

An introduction to architecture and construction with emphasis on materials, methods of construction, building equipment systems, codes and standards, contract documents, office procedures, ethics, architectural practice and estimating.

DFT 120 Construction Drafting II/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 110 or three years of high school drafting.

Introduces the development of a set of residential and wood frame construction working drawings from a given sketch.

DFT 123 Building Utilities and Site Work/3 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 120.

The basic concepts for building service support systems and site development.

DFT 130 Construction Drafting III/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 120.

A continuation of DFT 120, developing construction drawings for a masonry and wood frame residence from house sketches selected by students.

DFT 140 Construction Drafting IV/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 130.

A continuation of DFT 130, developing construction details and drawings for a medium size steel and concrete building.

DFT 149 Independent Study in Drafting/1-3 cr. hrs./3-9 periods(lab)

Independent study of a special project not included in regular courses. The student is required to obtain a sponsoring instructor in this area, establish objectives and a method of procedure and a method of evaluation.

DFT 150 Technical Drafting I/4 cr. hrs./6 periods(3 lec., 3 lab)

The student proceeds through problems he will meet in his association with engineers and designers, and becomes familiar with drafting tools, sketching, lettering, geometric construction, orthographic projection, dimensioning, isometrics, sections and auxiliary views using military standards and specifications as a guide.

DFT 150 Dibujo Técnico I/4 cr. hrs./6 periods(3 lec., 3 lab)

Consiste en conocimientos de los instrumentos de dibujo y su uso. Práctica de letras y composiciones geométricas. Conocimientos de líneas y acotaciones. Proyección ortográfica e isométricas. El estudiante estudiará esto y demás problemas que se encuentran al trabajar con ingenieros o diseñadores.

DFT 150A Technical Drafting I—Basic Procedures**1.3 cr. hrs./2 periods(1 lec., 1 lab)**

Students are introduced to drafting tools, freehand sketching, lettering, simple dimensioning and geometric construction.

DFT 150B Technical Drafting I—Dimensioning and Multi-Views**1.3 cr. hrs./2 periods(1 lec., 1 lab)**

☐ Prerequisite: DFT 150A.

The basics of dimensioning plus an intensive use of orthographic projection. Use of isometric sketches included to assist in solving three view layout problems.

DFT 150C Technical Drafting I—Drawing Sectional and Auxiliary Views**1.3 cr. hrs./2 periods(1 lec., 1 lab)**

☐ Prerequisite: DFT 150B.

The student's knowledge of orthographic representation is extended through the use of auxiliary views and sectional drawings. ANSI standards are used.

DFT 151 Technical Drafting II/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 150.

A continuation of DFT 150, furthering the student's skills. First course procedures are reviewed with the following topics occurring for problem solution: dimensioning, tolerancing, detail and assembly drawings, and hardware selection with Mil Standards and Specifications as the guide.

DFT 151 Dibujo Técnico II/4 cr. hrs./6 periods(3 lec., 3 lab)

Una continuación de DFT 150, ampliando las pericias de los estudiantes. Los procedimientos del primer curso se estudian para encontrar soluciones de otros problemas técnicos de esta materia.

DFT 152 Technical Drafting III/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 151.

This course follows DFT 151 and covers additional problems in mechanical drafting. The student is given more advanced problems, typical of industry, to develop skill, accuracy and speed.

DFT 153 Tool Design/4 cr. hrs./6 periods(4 lec., 2 lab)

☐ Prerequisite: DFT 152.

Introduction to the problems of tool design, drill jigs, radius dies, fixtures, welding jigs and assembly jigs. Drawings are prepared concurrently with the study of related shop practices, mathematics, geometry, materials and basic tools of jig and fixture fabrications.

DFT 154 Electronic Drafting/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 150, ETR 1.

Offered primarily for the drafting technician student. Instruction stresses schematics, logic diagrams, printed circuit and integrated circuit layout, including taping.

DFT 155 Electro-Mechanical Design I/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: DFT 152, 154.

Practical packaging problems, common to the electronics industry, are studied. Includes electrical, mechanical, environmental, functional and manufacturing involvement in the design of electro-mechanical gear.

DFT 156 Drafting for Machine Technology I/3 cr. hrs./6 periods(3 lec., 3 lab)

Course provides the information and skill needed for an understanding of the tooling trade related to numerical control. The student will demonstrate his knowledge by preparing reports and drawings pertaining to basic tools (fixtures and jigs) for machine operator's documents.

DFT 299 Cooperative Drafting Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a drafting occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

DRAMA**DRA 51 Theater Practice for the Serious Amateur/3 cr. hrs./5 periods(2 lec., 3 lab)**

A course in techniques of acting and theatrical presentation for beginning actors of all ages. Designed to stimulate participation in various types of community theatrical presentations.

DRA 105-106 Introduction to Acting I, II/3-3 cr. hrs./5 periods(3 lec., 2 lab)

☐ Prerequisite: DRA 105 for DRA 106.

Introduction to performance techniques and the development of physical skills for effective performance; techniques of acting and characterization, and the actor's relationship to all aspects of theatrical production.

DRA 115 Make-Up/1 cr. hr./3 periods(1 lec., 2 lab)

The study and practice of straight and character make-up under various conditions. Also, the history of make-up and masks in various cultures.

DRA 120 Stagecraft and Production I/3 cr. hrs./5 periods(2 lec., 3 lab)

A study and experience in the operation and effect of various types of stages and stage scenery; the drafting and construction of stage scenery; and the history and construction of costumes and properties. (DRA-120-121 need not be taken in sequence.)

DRA 121 Stagecraft and Production II/3 cr. hrs./5 periods(2 lec., 3 lab)

A study and experience in the theatrical organization and stage management, lighting design and operation, and scene painting.

DRA 201 Independent Studies in Drama/1-4 cr. hrs./3-12 periods(lab)

Students work at various assigned tasks in theatrical productions under the guidance of an instructor. Other projects which students design may at times be approved by instructors.

DRA 240 History of Theater I/3 cr. hrs./3 periods/3 lec.

A study of theater, drama and audiences from ancient Greece to the late 18th century.

DRA 241 History of Theater II/3 cr. hrs./3 periods/3 lec.

A study of theater, drama and audiences from the 18th century to the present including a brief survey of Oriental and African theater.

DRA 248 Intermediate Acting I/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: DRA 105 and 120 (DRA 120 may be taken concurrently with DRA 248). The theories and experiences of creating sustained and logical character portrayals, using all types of dramatic literature from various cultures.

DRA 249 Intermediate Acting II/3 cr. hrs./4 periods(3 lec., 1 lab)

☐ Prerequisite: DRA 121 and either DRA 106 or 248; DRA 121 may be taken concurrently with DRA 249.

A continuation of the theories and experiences of creating sustained and logical character portrayals, using all types of dramatic literature from various cultures.

EARLY CHILDHOOD EDUCATION**ECE 106 The Growing Years/3 cr. hrs./3 periods/3 lec.**

The principle theme is the interplay of biological factors, human interaction, and social structure in shaping the growing child from earliest womb environment through early childhood into adolescence.

ECE 107 Human Development and Relations/3 cr. hrs./3 periods/3 lec.

An interdisciplinary and intercultural approach to human development and interpersonal relationships.

ECE 108 Literature for the Young Child/3 cr. hrs./3 periods/3 lec.

History and development of young children's literature; survey of materials, principles and techniques in the selection and presentation of various types of materials.

ECE 108 Literatura Infantil/3 cr. hrs./3 periods/3 lec.

La historia y el desarrollo de la literatura infantil; estudios de materiales, principios, metodología y técnicas en la selección y presentación de distintas clases de materiales.

ECE 110 Communication Skills for Children/3 cr. hrs./3 periods/3 lec.

The study of the role of language and literature in early childhood education with supervised students experience with material development and existing programs.

ECE 111 Technique for the Special Child/3 cr. hrs./3 periods/3 lec.

Techniques, procedures and trends in special education as they relate to the following areas of exceptionality: visually impaired, auditorially impaired, mentally impaired, physically impaired, emotionally disturbed, speech impaired and learning disabled.

ECE 112 Music/Art for Children/3 cr. hrs./3 periods/3 lec.

The presentation of materials, activities and procedures for facilitating the development of music and art activities for children.

ECE 112 Música Para el Niño/3 cr. hrs./3 periods

El papel de la música para el niño; presentación de materiales, actividades y procedimientos para enseñar música a los niños.

ECE 114 Effective Parenthood/3 cr. hrs./3 periods/3 lec.

Discussion of specific behavior problems related to personality development. Background for understanding parent-child relationships.

ECE 115 Development of Classroom Tools/3 cr. hrs./3 periods (2 lec., 1 lab)

Guided acquisition and development of classroom competencies such as health and safety practices, assessment instruments, clerical and audio-visual materials.

ECE 116 Understanding Children/3 cr. hrs./3 periods/3 lec.

The study of children, infancy through early adolescence, by student execution of projects with children.

ECE 117 Child Growth and Development/3 cr. hrs./3 periods/3 lec.

A study of the growth, development and acculturation of the child from conception through adolescence.

ECE 118 Introduction to Education/3 cr. hrs./3 periods/3 lec.

Classroom presentation of educational theories and philosophies with supervised field work to provide student exposure to varied educational settings.

ECE 120 Supervision and Administration/3 cr. hrs./3 periods/3 lec.

A study of all administrative responsibilities and duties of management and supervision within all areas of Early Childhood Education.

ECE 122 Community Resources/3 cr. hrs./3 periods/3 lec.

A study of the local early childhood education community resources and agencies through investigation and field work.

ECE 124 Math/Sciences for Children/3 cr. hrs./3 periods/3 lec.

The study of concepts, methods and materials used in teaching mathematics and science to children, including supervised student experience with material development and existing programs.

ECE 126 Teaching Techniques/3 cr. hrs./3 periods/3 lec.

Techniques have been identified which facilitate optimal environments for children. Practice is provided for student application of these techniques.

ECE 128 Child Care Programs I/3 cr. hrs./3 periods/3 lec.

Competencies required by child care personnel have been identified and alternative routes to their acquisition and development are offered.

ECE 130 Child Care Programs II/3 cr. hrs./3 periods/3 lec.

Required competencies in day care such as in infant care, toddler care, and school-age care have been identified and student acquisition and development is encouraged through classroom presentation and supervised experiences.

ECE 240 Early Childhood Education Practicum/3 cr. hrs./15 periods(lab)

Participation in community pre-schools for the purpose of gaining experience in program planning for the growth and learning of children up to six years of age. Weekly seminars are conducted to discuss theory and practice pertinent to the involvement of the pre-schools.

**ECE 299 Cooperative Early Childhood Education Training
3 cr. hrs./16 periods(1 lec., 15 lab)**

A supervised cooperative work program for students in an early childhood education occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

EARTH SCIENCES**ESC 60 Principles of Lapidary/3 cr. hrs./3 periods(1 lec., 2 lab)**

A practical laboratory course in the identification, polishing and mounting of semi-precious materials. (Same as ART 60.)

ESC 101 Physical Geography: Weather and Climate/4 cr. hrs./6 periods(3 lec., 3 lab)

The physical elements—weather, climate, vegetation and soils—are interrelated and form patterns of great importance to man. This course is about those elements, their interrelationships, the resulting patterns and why they are important.

**ESC 102 Physical Geography: Oceanography and Land Forms
4 cr. hrs./6 periods(3 lec., 3 lab)**

☐ Prerequisite: ESC 101 suggested but not required.

Topics include geographic characteristics of the major types of land forms plus an introduction to the oceans of the world and their relationship to man.

ESC 103 Cultural Geography/4 cr. hrs./6 periods(3 lec., 3 lab)

This course is about people, where and how they live and some of the reasons why they live as they do. Race, language, religion and the physical environment are interwoven and changed by time to produce many different economic and settlement patterns.

ESC 104 Earth, Sea and Sky/3 cr. hrs./3 periods/3 lec.

The study of the Earth Sciences covering segments taken from Astronomy, Meteorology, Climatology, Oceanography, and Geology. Does not include a lab.

ESC 110 Geology of the Western United States/3 cr. hrs./4 periods(2 lec., 2 lab)

This course provides an introduction to physical and historical geology using samples from the western United States including national parks and monuments.

ESC 112 Geology for Education Majors/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Majoring in education.

The processes, characteristics, origin and evolution of the earth; development of life; and man's dependence upon the earth. Applicability to elementary education is stressed. Credit is not allowed for ESC 112 if student has credit for either ESC 120 or 121.

ESC 115 Human Ecology/4 cr. hrs./5 periods (3 lec., 2 lab)

Focus is on the question of survival for mankind and other life forms, exploring both present problems and alternatives for the future. Included are lectures, discussions and field trips. (Same as Life Sciences 115.)

ESC 120 Introductory Geology I/4 cr. hrs./6 periods(3 lec., 3 lab)

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.

ESC 121 Introductory Geology II/4 cr. hrs./6 periods(3 lec., 3 lab)

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.

ESC 209 Mineralogy and Introduction to Petrology/4 cr. hrs./6 period(3 lec., 3 lab)

☐ Prerequisite: Successful completion of Introductory Geology I (ESC-120 or equivalent).

This course deals with the relationships between crystal chemistry, atomic structure and the properties of minerals, and teaches students how to use these relationships to make identifications. The students will also learn fundamental principles for the study of igneous, sedimentary and metamorphic rocks.

ESC 299 Cooperative Earth Sciences Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an earth sciences occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

ECONOMICS**ECO 100 Introduction to Microeconomics/3 cr. hrs./3 periods/3 lec.**

The role of prices in the allocation of economic resources with an emphasis on how individual consumers and producers make economic decisions.

ECO 101 Introduction to Macroeconomics/3 cr. hrs./3 periods/3 lec.

The determinants of the level of national income, employment and the price level are analyzed from the viewpoint of an economic policy maker.

ECO 298 Topics in Contemporary Economics/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ECO 100 or 101.

Supervised independent study of economic topics determined by student interest.

EDUCATION**EDU 100 Principles of Bilingual Education/3 cr. hrs./3 periods/3 lec.**

The philosophy, history, rationale, legislation and models of bilingual education.

EDU 100 Principios de la Educacion Bilingue/3 cr. hrs./3 periods/3 lec.

Same as above, offered in Spanish.

EDU 110 Social Sciences through Literature/3 cr. hrs./3 periods/3 lec.

This course is designed to teach the social sciences through literature. The different social studies areas will be covered and how these can be utilized in the elementary school as part of the curriculum.

EDU 110 Ciencias Sociales por medio de la literatura/3 cr. hrs./3 periods/3 lec.

Un curso disenado para enseñar las ciencias sociales usando como base la literatura. Tambien se exploran las diferentes ramas de las ciencias sociales y como se pueden utilizar en la escuela primaria como parte del curriculum.

ELECTRONICS**ETR 1 Introduction to Electronics/4 cr. hrs./6 periods(2 lec., 4 lab)**

☐ Prerequisite: MTH 70 series or concurrent enrollment.

A pre-program course for students who have not had previous training in electronics or for those who require some knowledge of electronic principles to support their major program. Includes DC circuits, use of multimeters, oscilloscopes and basic radio theory.

ETR 50 FCC Amateur License Preparation/3 cr. hrs./4 periods(3 lec., 1 lab)

This course prepares the student for the Federal Communications Commission amateur radio examination at the novice or general levels. Areas covered are history of amateur radio and its use as a public service, fundamentals of electronics, sending and receiving morse code, equipment installation and maintenance, and operation of receiver and transmitter. This course does not satisfy major requirements in the electronics program.

ETR 051 CB Radio for Operators/2 cr. hrs./3 periods(1 lec., 2 lab)

Course will cover the development of CB radio, regulations, parts of the system, installation, maximizing performance, courtesy and operation hints.

ETR 052 Shop and Bench Wiring/2 cr. hrs./4 periods(1 lec., 3 lab)

☐ Prerequisite: MTH 070 or equivalent.

A course in basic wiring theory and techniques which stresses safety and the skills of quality workmanship.

ETR 053 Small Appliance Repair/4 cr. hrs./6 periods(2 lec., 4 lab)

☐ Prerequisite: MTH 070 or equivalent.

Basic electrical theory and skills necessary for the repair of small appliances commonly found within the household.

ETR 100 Fundamentals of Electronics/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 1 or equivalent, and MTH 130 or 115, or concurrent enrollment.

Topics include fundamentals of direct current and alternating current, passive circuit elements and their interaction with active circuit devices such as diodes, transistors and vacuum tubes.

ETR 105 Electronics Circuits and Systems I/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 100 and MTH 150 or 125, or concurrent enrollment.

The fundamentals of circuit analysis; power supplies; regulators; class A, B, AB and C amplifiers; introduction to feedback amplifiers. May be taken concurrently with ETR 110.

ETR 110 Digital Electronics/3 cr. hrs./4 periods(2 lec., 2 lab)

☐ Prerequisite: ETR 100 and MTH 150 or 125, or concurrent enrollment.

The fundamentals of digital electronics, binary, octal and hexadecimal arithmetic, digital logic, discrete and integrated circuits; and programming of PDP-8L computer in the BASIC language. May be taken concurrently with ETR 105.

ETR 120 Electronics Measures & Construction

2 cr. hrs./3 periods (1 lec, 2 lab)

Basic skills required to work on electronics equipment. Course includes techniques of soldering and desoldering, wire stripping, wire wrapping, construction of chassis, and use of tools. The oscilloscope is studied with extensive laboratory experience.

ETR 140 Television Repair I (Black and White)/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 100 and MTH 115 or 130, or equivalent.

The fundamentals of television circuits, tubes and transistors; theory, alignment and repair of black and white television receivers.

ETR 145 Television Repair (Color)/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 140 or practicing TV technician.

Color television theory, alignment and repair; picture tube convergence, IF amplifiers, tuner alignment, remote control automatic tuning, sync and high-voltage circuits.

ETR 150 Home Entertainment Equipment Repair/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 140 and ETR 105.

The repair of home entertainment equipment other than television receivers. Course includes theory and repair of audio amplifiers, AM-FM-MPX receivers, tape decks, cassette decks, turntables, dolby and other noise reduction devices.

ETR 160 CB Radio Repair I/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisites: ETR 100 or active electronic technician.

Recommend co-requisite ETR-290. A course designed to teach the theory of the basic and special circuits used in CB radio transceivers. Circuit theory and use of appropriate test equipment in a laboratory situation will be included.

ETR 230 Advanced Circuits and Systems/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 105 and 110, plus MTH 155 or 205, or concurrent enrollment.

Advanced circuit analysis, primary signal sources, filters, R.F. amplifiers, AM and FM modulation systems.

ETR 235 Communications/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 230.

Communications systems from low through microwave frequencies; FM, AM and PM modulation and multiplexing methods and antenna systems; troubleshooting and system alignment techniques.

ETR 250 Digital Devices/4 cr. hrs./6 periods(2 lec., 4 lab)

☐ Prerequisite: ETR 105 and 110 or equivalent experience; plus MTH 155 or 205 or concurrent enrollment.

Digital integrated circuit applications, construction and maintenance; specific applications of TTL logic family in a multiplexed digital communications system.

ETR 251 Digital Devices II/6 cr. hrs./8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 250 and ETR 253.

Operational amplifiers, A/D—D/A converters, modems, synchronous and asynchronous data communications, digital transmission lines, interface to AC circuits and control loops of process control applications.

ETR 255 Digital Systems/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 250.

Minicomputer maintenance, interfaces, assembly and machine languages, MOS logic, operational amplifiers, A/D-D/A converters pulse modulation, modems, digital transmission lines, unijunction transistors and SCR/TRIAC control of AC circuits.

ETR 256 Microprocessors/6 cr. hrs./8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 255, ETR 250.

A study of an 8080 based microprocessor system with CMOS bussed logic, assembly language programming, use of cross assemblers, programming and erasure of EPROMS, interface circuits of microprocessor systems, DMA operations, and laboratory interface projects.

ETR 257 Computer Peripherals/4 cr. hrs./6 periods (2 lec., 4 lab)

☐ Prerequisite: ETR 250 and ETR 255.

Operation and maintenance of computer peripherals including CRT terminals, floppy disks, hard disks, tape drives, and printers.

ETR 260 CB Radio Repair II/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ETR 160 (or equivalent) and 2nd Class F.C.C.

License or concurrent enrollment in ETR-290. A course designed to teach electronic technicians/students to install, troubleshoot, and align CB radio transceivers. Circuit theory and use of appropriate general purpose and special purpose CB test equipment will be included.

**ETR 274 Industrial Instrumentation (Hydraulics and Pneumatics) Systems
6 cr. hrs./8 periods(4 lec., 4 lab)**

☐ Prerequisite: MTH 125 or MTH 130 or equivalent.

Principles of industrial fluid (Hydraulic and Pneumatic) control and instrumentation systems, pressure transducers, pressure control devices and pressure loop systems are studied.

ETR 276 Industrial Electronics Systems/6 cr. hrs./8 periods(4 lec., 4 lab)

☐ Prerequisite: ETR 274

Elementary principles of industrial electronic control and instrumentation systems, electronic transducers, electronic control devices and electronic loop systems are studied.

ETR 290 Second Class F.C.C. License/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: ETR 230 or equivalent experience.

Preparation for Federal Communications Commission second class radiotelephone license examination and review of circuit analysis, laws and regulations.

ETR 295 First Class F.C.C. License Preparation/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ETR 290 or equivalent.

Preparation for Federal Communications Commission first class radiotelephone license examination and review of circuit analysis.

**ETR 296 Cooperative Electronics Training Alternating Plan
6 cr. hrs./41 periods(1 lec., 40 lab)**

A supervised cooperative work program for students in occupational programs for a minimum of 40 hours work per week. Cooperative education may be taken for a maximum of 12 credit hours over two or more semesters. Course objectives differ each semester.

**ETR 297 Cooperative Electronics Training Alternating Plan
6 cr. hrs./41 periods(1 lec., 40 lab)**

A supervised cooperative work program for students in occupational programs for a minimum of 40 hours work per week. Cooperative Education may be taken for a maximum of 12 credit hours over two or more semesters. Course objectives differ each semester.

ETR 299 Cooperative Electronics Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an electronics occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

EMERGENCY MEDICAL TECHNOLOGY**EMT 51 Emergency Medical Technology/5 cr. hrs./6 periods(4 lec., 2 lab)**

☐ Prerequisite: Consent of instructor.

A 114-hour course covering all techniques of emergency medical care currently considered as responsibilities of the emergency medical technician. Skills are developed in recognizing symptoms of illness and injuries and proper procedures of emergency care.

EMT 58 Refresher Training for EMT/2 cr. hrs./3 periods(1 lec., 2 lab)

☐ Prerequisite: EMT 51 or equivalent, and must have graduated from the basic course at least one year prior to the semester offered.

For students in the Emergency Medical Technology field who must meet Arizona Corporation Commission refresher training requirements.

ENGINEERING

ENG 110 Construction Surveying/3 cr. hrs./6 periods(2 lec., 4 lab)

☐ Prerequisite: MTH 110 or consent of instructor.

Course covers the use of surveying instruments, measurement of horizontal distances, leveling, angle measurements, traversing, locating details, stadia surveys, topographic mapping and grade staking.

ENG 120 Engineering Graphics/3 cr. hrs./7 periods(1 lec., 6 lab)

☐ Prerequisite: DFT 150 or equivalent.

Freehand technical sketching, instrument working drawings, principles of projection, descriptive geometry, applications to engineering space problems.

ENG 130 Elementary Surveying/3 cr. hrs./6 periods(2 lec., 4 lab)

☐ Prerequisite: MTH 150 and 155, or MTH 160.

Measurement of horizontal distances, use of surveying instruments, angle measurements, traverse surveys and computations, topographics, government land surveys and solar observations.

ENG 210 Engineering Mechanics-Statics/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: PHY 210, MTH 215—may be taken concurrently.

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: ENG 210.

Rectilinear motion, curvilinear motion, kinetics of particles, energy and momentum methods, kinematics of rigid bodies, plane motion of rigid bodies, and mechanical vibrations.

ENG 230 Mechanics of Materials/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ENG 210.

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: ETR 100, CSC 140, MTH 180.

Digital coding of information, basic logic design, computer organization and programming.

ENG 245 Elementary Circuit Theory/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: PHY 216 or PHY 132 and concurrent enrollment in MTH 220.

Steady State AC & DC circuit analysis, natural response of first order systems, introduction to magnetic circuits and transformers.

ENG 250 Numerical Analysis for Engineers/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: CSC 140, ENG 210, MTH 215.

Applications of numerical methods and computer programming techniques to the solution of mathematical models of engineering systems.

ENG 299 Cooperative Engineering Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an engineering occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

ENGLISH AS A SECOND LANGUAGE

ESL 50 Series is offered for foreign and bilingual students. The ESL program is a special program designed for bilingual and foreign students in order to develop proficiency in oral and written English. Students will be placed in the program according to language test results.

Placement tests and teacher evaluation determine each student's entry level.

ESL is an intensive study for acquiring and improving basic skills in listening, speaking, reading and writing Americanized English.

ESL 50 Elementary Grammatical Patterns/6 cr. hrs./8 periods(6 lec., 2 lab)

This course has as its main goal the development of listening and speaking skills in the frequently used patterns of American English. Reading and written exercises are introduced to reinforce these patterns.

ESL 51 Intermediate Grammatical Patterns—Levels I and II
3 cr. hrs./4 periods(3 lec., 1 lab)

The main goal is the development of listening and speaking skills in the frequently used patterns of American English. Reading and writing are introduced to reinforce these patterns.

ESL 52 Intermediate ESL Reading and Writing—Levels I and II
3 cr. hrs./4 periods(3 lec., 1 lab)

Level I—The reading component stresses vocabulary development and the development of cultural awareness gained from reading various types of American literature written on a low intermediate level. Basic word recognition, comprehension and study skills are introduced. The writing component stresses skills in writing basic word order, certain tenses and parts of speech, and mechanics in various types of writing. Level II—Reading and writing components are on a more advanced intermediate level.

ESL 53 Advanced Grammatical Patterns/3 cr. hrs./4 periods(3 lec., 1 lab)

The main goal of the course is the development of listening and speaking skills in the frequently used patterns of American English. Reading and writing are introduced to reinforce these patterns.

ESL 54 Advanced Reading/3 cr. hrs./4 periods(3 lec., 1 lab)

Vocabulary development and the development of cultural awareness are gained from reading various types of American literature written on an advanced level. More advanced word recognition, comprehension and study skills are introduced.

ESL 55 Advanced Writing/3 cr. hrs./4 periods(3 lec., 1 lab)

Skills are developed in writing advanced sentence patterns using advanced word order, certain tenses, parts of speech and basic methods of paragraph development in various types of writing.

ESL 57 Composition I/3 cr. hrs./3 periods/3 lec.

This is a first semester English composition course at the freshman level designed to help the foreign and bilingual student with special needs. It offers possible equivalence with WRT 101.

ESL 58 Composition II/3 cr. hrs./3 periods/3 lec.

This is a second semester freshman composition course designed to help foreign and bilingual students with special needs. It offers possible equivalence with WRT 102.

EXPLORATORY

EXP 51 Social Science Survey/4 cr. hrs./4 periods/4 lec.

Includes units from the social or behavioral sciences selected by the student.

EXP 60 People/1 cr. hr./1 period/1 lec.

Learning teams give members a chance to explore ideas and experiences in many different areas of study, work, cultural awareness and community development.

EXP 60 La Gente/1 cr. hr./1 period/1 lec.

Grupos de aprendizaje ofrecen a los participantes la oportunidad de explorar nuevas ideas y experiencias en las áreas del estudio, trabajo, conocimiento cultural y participación en la comunidad.

EXP 70 The World Energy Crisis/3 cr. hrs./3 periods/3 lec.

Exploration of the different facets of the energy "crisis," domestic & international, and develop an awareness of energy as a foundation of the United States and world economics.

EXP 87 Music Appreciation/3 cr. hrs./3 periods/3 lec.

This course is for non-music majors and surveys the formal development of musical ideas and their relationship to culture.

EXP 88 Political Involvement/3 cr. hrs./3 periods/3 lec.

Survey of local, state and national government campaigns, running for political office, and effective campaign management. To aid persons who wish to become involved in the political process.

EXP 89 Funding Projects/3 cr. hrs./3 periods/3 lec.

A practical course designed to assist agency and business employees in the preparation of proposals for federal funds and an analysis of United States government interests and federal agencies. The student will be able to write elementary proposals for federal grants.

EXP 90 Picture Framing/2 cr. hrs./3 periods(1 lec., 2 lab)

A basic course in selecting molding, matting materials, and construction of picture frames; and instruction in the safe operation of power and hand tools. This course is intended for students who are employed or seek employment in galleries or framing shops.

EXP 99 How to Study/3 cr. hrs./3 periods/3 lec.

Course emphasizes skills necessary for effective reading, notetaking, remembering, report writing, listening, preparing for and taking exams, and planning your study time.

FASHION DESIGN AND CLOTHING**FDC 111 Clothing Construction—Beginning I/3 cr. hrs./5 periods(2 lec., 3 lab)**

The fundamental principles of clothing construction, selection of fabrics and styles using commercial patterns. A proficiency test is permitted.

FDC 111 Costura/3 cr. hrs./5 periods(2 lec., 3 lab)

Construcción básica de ropa sencilla usando patrones comerciales y las bases fundamentales para construir ropa, estudio de textiles selección y cuidado de telas.

FDC 112 Alteration and Designing/3 cr. hrs./5 periods (2 lec., 3 lab)

The coordinated method of flat pattern alterations and basic principles of alterations on ready-to-wear.

FDC 121 Applied Dress Design/3 cr. hrs./3 periods/3 lec.

The flat pattern method of pattern making is taught with emphasis on engineering, not fashion design.

FDC 122 History of Fashion/3 cr. hrs./3 periods/3 lec.

The evaluation of fashion is combined with historical events and trends.

FDC 126 Textiles/3 cr. hrs./5 periods (2 lec., 3 lab)

The technology of textile fibres, yarns, construction and cost, based on social, aesthetic and individual needs.

FDC 131 Clothing Selection/3 cr. hrs./3 periods/3 lec.

A consumer analysis of clothing design, construction and cost based on social, aesthetic and individual needs.

FDC 132 Psychology of Dress/3 cr. hrs./3 periods/3 lec.

A study of human behavior in relationship to clothing; the formal and informal aspects of dress; purposes and forces of society relative to dress.

FDC 141 Fashion Design I/3 cr. hrs./3 periods/3 lec.

The theory of fashion design; a profile of the designer at work; the application of fine art principles to garment design; and the study of fabric behavior and support notions.

FDC 142 Alteration and Repair/3 cr. hrs./5 periods (2 lec., 3 lab)

Techniques for lengthening the life and use of garments; methods of changing, minor fitting, repairing, reconditioning and restoring clothes.

FDC 211 Clothing Construction—Advanced II/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: FDC 111 or consent of instructor or proficiency exam.

Advanced clothing construction techniques, 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: FDC 211 or consent of instructor or proficiency exam.

Course stresses custom and semi-commercial tailoring techniques with an emphasis on natural fibres. Experiments with recent developments in construction methods are included.

FDC 241 Fashion Design II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisites: FDC 111, 121, 141.

Students design a pattern, select materials and construct an original garment.

FDC 299 Cooperative Fashion Design Training/3 cr. hrs./16 periods (1 lec., 15 lab)

A supervised cooperative work program for students in the fashion design and clothing area for an average of 15 hours per week on job training. Course may be taken four times for a maximum of twelve credit hours. Course objectives differ each semester.

FAST FOOD INDUSTRY

FFI 101 Restaurant Operations and Sanitation/3 cr. hrs./3 periods/3 lec.

Analysis of the restaurant and fast food industry techniques of control in sanitation, quality, time, and cost management. Developing positive attitudes toward the product by employees and customers is stressed. Emphasis is on the contribution to profitability by the individual employee. Student learns required material and may sit for Food Sanitation Certificate test at mid term (administered by Pima County Health, fee required).

FFI 102 Restaurant Cash Register Operations and Inventory Control 3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 060 or concurrent enrollment or equivalent.

Analysis of the restaurant and fast food industry techniques of control in: cash register transactions, records, materials, and profit margins. Emphasis is placed on the contribution by the employee to profitability.

FINANCE

FIN 101 Savings and Loan Business Operations/3 cr. hrs./3 periods/3 lec.

A view of the role of savings associations in the country's economy; also, a detailed exposure of the asset-liability structure as well as the needs and uses of accounting and other statistical reports. Course content includes association tax regulations, using reports to analyze savings flows and lending processes, savings associations and the social environment.

FIN 102 Principles of Bank Operations/3 cr. hrs./3 periods/3 lec.

The fundamentals of bank functions are given in a descriptive fashion to help the beginning banker view his profession in a broad perspective.

FIN 104 Insurance of Savings Accounts/3 cr. hrs./3 periods/3 lec.

Course content includes insurance of accounts, proxies, loans secured by savings accounts, decedent accounts, liquidity, terminology, policy regarding legal advice, classification of ownership and basic theory of savings.

FIN 106 Teller Operations—Public Relations/3 cr. hrs./3 periods/3 lec.

Course develops the teller to provide accurate and efficient service, and introduces fundamental principles of public relations. Topics include handling of cash and checks, savings accounts, how images are created, public relations practices and reports on attitudes and customer relations.

FIN 131 Credit Union Basics/3 cr. hrs./3 periods/3 lec.

The credit union idea is explained in detail. Course also provides information and training to prepare persons as credit union executives. Students learn details of credit union operations, how to conduct an annual meeting and what preparations are needed, and how to present the credit union idea at a public meeting.

FIN 132 Credit Union Management/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FIN 131.

Designed for the potential credit union office manager. Topics include policy formulation, personnel practices, growth management, counseling and lending, account servicing, fund management, and the responsibilities of elected and appointed officials.

FIN 133 Individual Life and Health Insurance/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: An insurance agent's license or a general insurance course. Students receive a thorough knowledge of life and health insurance and how to apply the knowledge to actual family and business situations. Content includes the role of insurance in meeting economic security needs, types of individual and special life and annuity contracts, individual health insurance contracts, and life insurance as related to premiums, reserves, non-forfeiture values, surplus and dividends. This course is part of a series preparing the licensed agent for a Chartered Life Underwriters' qualification examination.

FIN 134 Life Insurance Law & Company Operations/3 cr. hrs./3 periods/3 lec.

Content includes: legal aspects of contract formation; policy provisions; assignments; ownership rights; creditor rights; beneficiary designations; disposition of life insurance proceeds; settlement options. Also, types of insurers, risk selection, temporary investments, financial statements, and regulation and taxation of companies.

FIN 135 Business Insurance/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: An insurance agent's license or a general insurance course. The course develops a working understanding of the business uses of health and life insurance. Studied are proprietorship, partnership and corporation continuation problems, and their solution through use of buy-sell agreements properly funded to preserve and distribute business values. Other business uses of health and life insurance, such as key man insurance, non-qualified deferred compensation plans and split-dollar plans also are covered. Human behavior and business ethics are included. This course is part of a series preparing the licensed agent for a Chartered Life Underwriters' qualification examination.

FIN 136 Investments & Family Financial Management/3 cr. hrs./3 periods/3 lec.

Students receive a broad understanding of investment and family financial management concepts and practices. Included are the subjects of yields, limited income securities, growth factors, and analysis of financial statements. Other topics include family budgeting, property insurance, mutual funds, variable annuities, and aspects of other investment media.

FIN 137 Group Insurance and Social Insurance/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: A basic background in life insurance, such as an agent's license or a general insurance course.

An analysis of group life and health insurance including marketing, underwriting, re-insurance, premiums and reserves. There also is an introduction to socio-economic problems related to old age, unemployment and disability, and various plans that have been developed to meet these problems. This course is part of a series preparing the licensed agent for a Chartered Life Underwriter's qualification examination.

FIN 138 Pension Planning/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: A basic background in life insurance, such as an agent's license or a general insurance course.

Considered in detail are tax considerations, cost factors and funding instruments involved in private pensions, profit sharing plans and tax-deferred annuities. This course is part of a series preparing the licensed agent for a Chartered Life Underwriter's qualification examination.

FIN 202 Trust Functions and Services/3 cr. hrs./3 periods/3 lec.

Designed for personnel of trust departments in commercial banks and trust companies, the course presents a complete picture of services offered by institutions engaged in the trust business.

FIN 203 Bank Management/3 cr. hrs./3 periods/3 lec.

A working knowledge of bank management is provided along with new trends which have emerged in the philosophy and practice of management. Case study also is introduced.

FIN 204 Credit Administration/3 cr. hrs./3 periods/3 lec.

Aimed at the executive level, this course reviews factors influencing and determining loan policy. Discussed are credit investigation and analysis, credit techniques, specific credit problems, and regular and unusual types of loans.

FIN 205 Real Estate Finance/3 cr. hrs./3 periods/3 lec.

The viewpoint of the home mortgage loan officer is taken in this course. The mortgage market picture is presented first, then the acquisition of a mortgage portfolio; also mortgage plans and procedures, mortgage loan processing and servicing, and obligations of the mortgage loan officer.

FIN 206 Bank Public Relations and Marketing/3 cr. hrs./3 periods/3 lec.

The basis of public relations, both internal and external, is discussed.

FIN 207 Bank Letters and Reports/3 cr. hrs./3 periods/3 lec.

For bank officers, supervisors and employees who dictate or review correspondence: not only mechanical forms of bank letters, but psychological principles that help the writer achieve best results. The course covers letter forms, different kinds of bank letters, and principles underlying modern correspondence.

FIN 208 Installment Credit/3 cr. hrs./3 periods/3 lec.

Presented are techniques of installment lending with emphasis on credit, obtaining and checking information, servicing the loan and collecting amounts due. Other topics covered are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending.

FIN 210 Money and Banking/3 cr. hrs./3 periods/3 lec.

Stressed are practical aspects of money and banking and the basic monetary theory needed by banking students. Emphasis also is on economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments and foreign exchange.

FIN 211 International Banking/3 cr. hrs./3 periods/3 lec.

The basic framework and fundamentals of international banking are introduced along with how money is transferred from one country to another, how trade is financed, what the international agencies are and how they supplement the work of commercial banks, and how money is changed from one currency to another.

FIN 212 Financial Institutions/3 cr. hrs./3 periods/3 lec.

Content includes the role of finance, money and the money supply, banking, monetary roles of the Federal Reserve and Treasury, financial objects of corporate organization, the financing of business, securities, markets, small business finance, farm credit institutions and capital markets.

FIN 213 Business Finance/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 102.

A basic course dealing with the methods of securing and managing fixed and working capital funds of individual business units. Special problems encountered by minority enterprises in obtaining funds are highlighted.

FIN 216 Insurance/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: BUS 200.

This course explores the theory of risk and reviews the insurable risks faced by business and individuals. Content includes risk and insurance, contracts, property and liability insurance, homeowner's programs, general liability insurance programs, excess and umbrella liability contracts, special multi-peril contracts, planning and buying insurance.

FIN 217 Analyzing Financial Statements/3 cr. hrs./3 periods/3 lec.

Characteristics of financial statements and their analysis are covered. There also is a review of basic accounting principles for those who have studied accounting. For those who have not, there is a minimum accounting background provided for financial statement analysis.

FIN 218 Formulation of a Commercial Loan Decision/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Lending officer experience.

This course is for the professional lending officer who wishes to improve his ability to critically analyze a commercial loan application. The development of a formal written recommendation is stressed.

FIN 219 Management of Commercial Bank Funds/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 101 or a working knowledge of bank asset and equity accounts. This course is for those who have had previous study and/or work experience in banking and wish to further professionalize their banking knowledge and skills. Students will analyze, in detail, the composition of a commercial bank's asset accounts and, to some extent, the supporting equity accounts. Emphasis is on optimizing of bank profit while maintaining adequate liquidity and safety within the constraints imposed by law, regulation and the interests of the community.

FIN 221 Mortgage Loan Servicing/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: ACC 101.

For those whose work or management responsibilities involve mortgage loan servicing. Topics include payments, escrow accounts, real estate taxes, insurance, contract changes, delinquent loans, foreclosure, FHA and VA mortgages, and the secondary mortgage market.

FIN 223 Federal Reserve System/3 cr. hrs./3 periods/3 lec.

An examination of the operations and policies of the Federal Reserve System during critical periods over the past 60 years. The approach taken is topical rather than chronological, thereby enabling students to compare and contrast Federal Reserve policies dealing with similar problems at different periods in time. Attention is given to international monetary affairs and economic developments affecting the American fiscal system. The course is fundamental to American banking and considered highly desired for current and potential career bankers.

FIN 224 Advanced Installment Credit/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FIN 208.

This course is designed for lending officers and other supervisory personnel involved with installment loan departments and activities. Topical areas include: organizing and managing an installment credit department, federal and state credit legislation, rate structuring and yield determination, indirect lending, financial statement analysis and interpretation, leasing of consumer goods, and marketing credit services. Complex case studies emphasize the more difficult aspects of installment credit.

FIN 225 Bank Credit Cards/3 cr. hrs./3 periods/3 lec.

This course presents an overview of the bank card industry with the objective of developing the student's understanding of the economic role of the bank card as well as the basic operational problems involved in the successful management of a bank card plan. This course is designed for those currently employed or anticipating employment in commercial banks or related financial institutions.

FIN 231 Credit Union Operations/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FIN 132 and ACC 101 or consent of instructor or advisor.

This course, which is for developing or improving job skills, provides the in-depth knowledge and skills desired in a credit union manager. Topics include accounting systems, analysis of financial and statistical reports, data processing in credit unions, loss prevention and risk management, and the development of operating efficiencies.

FIN 232 Credit Union Advanced Management/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FIN 231.

For students who completed extensive course work in the financial area or who had diversified work experience in credit unions or other financial institutions. Topics include future of credit unions in a changing society, organizing for growth, long-range planning, developing management leadership, decision-making functions of the funds manager, and legislative trends. The course prepares students for management positions.

FIN 233 Advanced Banking Operations/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Two years banking experience.

A study of bank operations at a level appropriate for students who possess an overview knowledge. Relationships among departments and their functions are stressed. The creation of credit and the need for external controls are reviewed in depth.

FIN 234 Loan Officer Development/3 cr. hrs./3 periods/3 lec.

Students are prepared to perform the various critical functions of a commercial loan officer. Topical content includes the initial interview, loan development decisions and techniques, documentation for the credit file, problem loans, conveying unpleasant information, and in-basket and loan portfolio games.

FIRE SCIENCE**FSC 50 Basic Training—Fire Fighter/3 cr. hrs./10 periods(1 lec., 9 lab)**

☐ Prerequisite: Employment with Tucson Fire Department.

At least 12 weeks of classroom and field practice is spent at the Tucson Fire Department Training Center under the direction of instructors and in close liaison with the college's fire science coordinator.

FSC 51 Introduction to Fire Science/3 cr. hrs./3 periods/3 lec.

A historical and scientific background of the fire protection field; its development and future in America; governmental, industrial and private fire protection organizations and agencies; employment and promotional opportunities.

FSC 52 Fundamentals of Fire Prevention/3 cr. hrs./3 periods/3 lec.

Fire prevention surveys; "selling" the service to businessmen; helping the businessman to stay in business; public relations; and the application of fire prevention codes.

FSC 53 Hazardous Materials I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FSC 52, MTH 70 or consent of instructor.

A study of basic chemical concepts and their applications to the field of fire science.

FSC 54 Advanced Fire Prevention/3 cr. hrs./3 periods/3 lec.

Fire prevention in high risk and industrial occupancies; application of codes in the installation, operation, storage and transportation of dangerous materials; investigation and determination of fire causes; legal aspects of fire prevention and prosecution of violations.

FSC 55 Fire Investigation: Origin & Recognition of Arson/3 cr. hrs./3 periods/3 lec.

A basic course designed for minimum and uniform training in fire investigation for those private sector agencies, fire service and governmental agencies at state and local level—with or without police powers—who have direct responsibility for fire investigation; and to provide technical assistance to higher education levels.

FSC 61 Hazardous Materials II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FSC 53 or consent of instructor.

A study of chemical use expansion in the field of fire science; how to identify, classify, research and handle under hazardous and safe conditions most flammable, explosive, reactive and toxic materials; where they are likely to be found, shipped, used, and the special problems they cause.

FSC 62 Hydraulics and Fire Suppression/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 70, PHY 101 recommended.

Physical laws affecting the movement of water through pipes, hydrants, pumpers, hoses, etc.; functions and limitations of mechanical equipment to overcome these restrictions; effect of friction loss, head and pressure, water system; fire flow requirements and organization for fire suppression.

FSC 63 Fire Apparatus and Equipment/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: PHY 101 recommended.

Automotive apparatus; pumpers, aerial ladders, lift platforms, water towers, hose wagons, transports and utility vehicles; heavy auxiliary mechanical equipment and appliances; generators, compressors, rescue and forcible entry tools and cutting torches.

FSC 64 Fire Protection Systems/3 cr. hrs./3 periods/3 lec.

Portable and fixed fire extinguishing equipment, automatic sprinkler and deluge systems; rate of temperature rise and smoke detecting devices and alarm systems.

FSC 65 Building Construction for Fire Protection/3 cr. hrs./3 periods/3 lec.

How building design affects fire travel; relation of fire load to propagation of flame; non-conforming structures, application of building codes.

FSC 66 Fire Suppression, Strategy and Tactics/3 cr. hrs./3 periods/3 lec.

Planning an attack to fit the problem; revising the plan of attack to meet changing situations.

FSC 67 Rescue Practices and First Aid/3 cr. hrs./3 periods/3 lec.

Basic training in handling emergency situations.

FSC 68 Special Hazard Tactical Problems/3 cr. hrs./3 periods/3 lec.

This course teaches experienced fire fighters tactical problems and specific hazards not normally encountered. Included are characteristics and specific hazardous materials under fire conditions.

FSC 71 Public Safety Laws/3 cr. hrs./3 periods/3 lec.

Laws relating to the public safety profession; legal duties and responsibilities of public safety employees.

**FSC 299 Cooperative Fire Science Technician Training
3 cr. hrs./16 periods(1 lec., 15 lab)**

A supervised cooperative work program for students in a fire science technician occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

FOOD SCIENCE AND NUTRITION**FSN 055 International Cuisine/2 cr. hrs./3 periods(1 lec., 2 lab)**

A study of international foods through lectures to include a history of the foods studied; instructor's demonstrations and field trips.

FSN 113 Food Study/3 cr. hrs./5 periods(2 lec., 3 lab)

The composition and structure of foods using scientific principles in handling food, enhancement and/or quality.

FSN 114 Nutrition/3 cr. hrs./3 periods/3 lec.

The principles of human nutrition and its relationship to diet, health and cultural patterns.

FSN 124 Foods for Children/3 cr. hrs./5 periods(2 lec., 3 lab)

The selection, preparation and serving of foods, considering the basic nutritional principles and child development theories for parents and day care personnel, and using a multicultural child centered approach.

FSN 213 Meal Management/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: FSN 113 or consent of instructor.

The planning, preparation and serving of meals with emphasis on food economics, nutritional needs and management of resources.

FSN 214 Professional Food Services/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: FSN 113 or consent of instructor.

Quality food service methods and techniques as applied to institutions. Special emphasis is on equipment and management of time.

FRENCH**FRE 110-111 Elementary French, I, II/4-4 cr. hrs./4 periods/4 lec.**

An oral approach to French taught primarily through conversation. Reading and writing are introduced only after listening and speaking skills have been acquired. Only French is used.

FRE 210-211 Intermediate French I, II/4-4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: FRE 110-111.

A review of basic French skills supplemented by regular assignments of compositions in French and a variety of readings. As in the introductory course, only French is used.

GENERAL BUSINESS**GEB 40 Supervisor Techniques I/1 cr. hr./1 period**

Managerial functions, the supervisory role, leadership styles, as they are related to Civil Service Regulations. This course prepared for in-service training program for City of Tucson.

GEB 41 Supervisor Techniques II/1 cr. hr./1 period

Students study; self perceptions, career goals, interpersonal relationships, problem solving and time management as they relate to Civil Servants. This course was prepared for in-service training program for City of Tucson.

GEB 42 Supervisory Techniques III/1 cr. hr./1 period

Students study; verbal and non-verbal communication, attitudes, motivation, group dynamics, and human relationships as they relate to Civil Servants. Course prepared for in-service training program for City of Tucson.

GEB 43 Supervisor Techniques IV/1 cr. hr./1 period (1 lec, 1 lab)

Students study; employees behavior, causes of misbehavior, grievances, ARS Right to Work Code, and unionism as they relate to Civil Servants. This course prepared for in-service training program at request of City of Tucson.

GEB 55 Hospitality Information Processing/3 cr. hrs./3 periods/3 lec.

The principles of communication, oral and written, as applied to hotel-motel management.

GEB 60 Planning Your Retirement/3 cr. hrs./3 periods/3 lec.

Course surveys the psychological aspects of retirement, health care, legal affairs, money management, benefits for the retired, community services, leisure-time planning, and continuing education for senior citizens.

GEB 65 Practical Law/3 cr. hrs./3 periods/3 lec.

Students are taught an overview of basic legal concepts and laws as they relate to rights, responsibilities, and liabilities of every citizen.

GEB 66 State Elementary and Secondary School Law/3 cr. hrs./3 periods/3 lec.

The legal aspects of the elementary and secondary school systems in Arizona to include a study of state statutes and related problems.

GEB 70 Fundamentals of Freight Transportation/3 cr. hrs./3 periods/3 lec.

A survey of freight transportation procedures and regulations with emphasis on the application of classification systems, freight rates, routing and claims.

GEB 81 Supervision for Air Force Personnel II/1 cr. hr./1 period

Basic techniques for Air Force supervision. Includes intercultural relationships, advising and counseling, techniques of leadership, communicating with others, creative problem solving and organizational development. This course prepared for in-service training of Air Force personnel.

GEB 82 Supervision for Air Force Personnel III/1 cr. hr./1 period

Basic techniques of Air Force supervision. Includes the management process, supervisor's job, finding and meeting training needs, job enrichment, labor relations, the supervisor's rights and obligations, discipline and the supervisor, performance standards, and career development.

GEB 84 Public Relations/3 cr. hrs./3 periods/3 lec.

All categories of public relations problems and practices are covered: corporate, business, association, government, education and other agencies. Includes good media relations as well as writing news releases, newsletters, speeches, memos and the step-by-step operation of a public relations campaign. Course also provides an understanding of the place of public relations in an efficient organization.

GEB 86 Tax Problems of the Independent Businessman/3 cr. hrs./3 periods/3 lec.

Emphasis is on tax problems common to small businesses and industries: retail, service and manufacturing. Course also surveys accounting systems beneficial to the small businessman.

GEB 96 Applied Accounting/3 cr. hrs./3 periods/3 lec.

A basic course with emphasis on establishing and maintaining records of accounts receivable and payable, preparing operating statements, balance sheets and tax forms. Prepares students for entry level jobs requiring some bookkeeping knowledge.

GEB 97 Television Advertising/3 cr. hrs./3 periods/3 lec.

An introduction to the principles of television advertising with emphasis on the use of visual and oral techniques in preparing advertisements. Prepares students for entry level jobs in the television advertising field.

GEB 99 The Stock Market/3 cr. hrs./3 periods/3 lec.

The study of stocks, bonds, speculative investments, mutual funds, and commodities.

GENERAL MACHINE SHOP**GMC 50 General Machine Shop/3 cr. hrs./4 periods(1 lec., 3 lab)**

The student is taught to safely use the engine lathe, horizontal and vertical mill, horizontal grinder, drill press, and power saw.

GENERAL TECHNOLOGY**GTC 1 Fire Operations/3 cr. hrs./3 periods/3 lec.**

Specialized classroom and practical experiences concerned with the practices and techniques of fire fighting. Instruction covers the chemistry of fire fighting; the use of water and other materials in fighting fires; the various types of fire fighting equipment and aids and their uses such as extinguishers, pumps, hoses, rope ladders, and gas masks.

GTC 2 Fire Operations II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: GTC 1.

Specialized classroom and practical experiences concerned with the practices and techniques of fire fighting. Instruction covers principles of community fire defense; methods of entry; rescue principles, practices and equipment; salvage equipment and work; hydraulics and fire extinguishment.

GTC 5 First Aid and Safety Practices/2 cr. hrs./3 periods(1 lec., 2 lab)

Emergency first aid procedures; the care and transportation of those with accident injuries.

GTC 10 Basic Electricity/3 cr. hrs./4 periods(2 lec., 2 lab)

Introduction to electrical safety, electrical principles, DC currents, AC wiring systems and electrical trouble shooting.

GTC 15 Introduction to Electronics Assembly/1 cr. hr./1 period/1 lec.

The course is designed to introduce students to the fundamental terminology, processes and functions associated with the assembly of electronic components.

GTC 16 Electronics Assembly: Chip Pick/1 cr. hr./2 periods(1 lec., 1 lab)

This course is designed to develop student's skills in the chip pick task of the electronic component assembly process.

GTC 17 Electronics Assembly: Die Attach/3 cr. hrs./4 periods(2 lec., 2 lab)

This course is designed to develop student's skills in the die attach task of the electronic component process.

- GTC 18 Electronic Assembly: Wire Bond/4 cr. hrs./5 periods(3 lec., 2 lab)**
This course is designed to develop the student's skills in the wire bond task of the electronic component process.
- GTC 20 Small Engine Repair/3 cr. hrs./4 periods(2 lec., 2 lab)**
Classroom and shop experience concerned with maintaining and repairing a variety of small engines used on portable power equipment, e.g., lawnmowers, outboard motors, chain saws, and rotary tillers. Instruction includes principles of internal combustion engine operations, reading technical manuals, and customer relations.
- GTC 60 Building Materials/3 cr. hrs./3 periods/3 lec.**
A study of the properties, grading and cost of materials, hardware and supplies commonly used in the construction of commercial and residential structures.
- GTC 61 Buildings and Materials Cost Estimating/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: GTC 60.
Fundamentals of construction blueprint reading and methods of cost estimating materials, labor, and equipment.
- GTC 62 Occupational Safety and Health Act (OSHA)/3 cr. hrs./3 periods/3 lec.**
A practical approach to the requirements of OSHA, its application in the workplace, and its impact upon the employee and employer. Students develop an awareness of safety and health programs essential in the workplace for compliance with the Act.
- GTC 65 Basic Construction Principles/3 cr. hrs./3 periods/3 lec.**
A study of general basic construction principles; choice of materials and their application to select structural systems; and components in concrete and wood.
- GTC 66 Introduction to Water Treatment/3 cr. hrs./3 periods/3 lec.**
A survey of water treatment and distribution which includes basic math, chemistry, micro aeration, sedimentation, chlorination, pumps, valves, regulations, and standards. Prepares operators for Grade II water certification.
- GTC 68 General Welding/2 cr. hrs./4 periods(1 lec., 3 lab)**
The techniques and practices of joining metals by electric arc welding as applied to the ironworker trade.
- GTC 83 Equine Animal Science/3 cr. hrs./3 periods/3 lec.**
Course includes anatomy and physiology, reproduction, health maintenance, disease prevention, and general care of horses. Course prepares persons for entry level jobs with large animal veterinarians.
- GTC 84 Livestock Law and Investigative Procedures/3 cr. hrs./3 periods/3 lec.**
A special interest course in Arizona Livestock Law and regulation as applied in the field to living and processed farm or ranch animals including prevention of and inspection of disease, livestock sanitary board activities, applicable law enforcement methods and investigation of livestock legal problems.
- GTC 85 Aviation Ground School—Private/3 cr. hrs./3 periods/3 lec.**
An introductory civil aviation ground school course which provides the necessary background in theory of flight, weather, navigation and procedures for the student to become a private pilot.
- GTC 87 Aviation Ground School—Instruments/3 cr. hrs./3 periods/3 lec.**
A lecture course designed to familiarize the student with various aircraft instruments. Emphasis is on instrument flight rules.
- GTC 88 Aviation Ground School—Commercial/3 cr. hrs./3 periods/3 lec.**
This civil aviation ground school course provides the necessary background in theory of flight, weather, navigation, and procedures to become a commercial pilot.
- GTC 90 Landscape Gardening/3 cr. hrs./3 periods/3 lec.**
Problems in design, elementary principles of botany, environmental considerations and commonly used materials with special emphasis on landscaping in the Southwest.
- GTC 92 Woodshop I/3 cr. hrs./5 periods(2 lec., 3 lab)**
Techniques of wood preparation and finishing with emphasis on functional design, drawing and reading project plans. Course includes safety practices and use of shop equipment. Prepares students for custom woodworking.

GTC 93 Elementary Television Repair/3 cr. hrs./6 periods(2 lec., 4 lab)

A basic course in television repair designed to assist students in diagnosing common television receiver difficulties. Instruction includes simple tests to locate common receiver malfunctions, fundamentals of reading electronic circuit blueprints, and safety practices in routine repair. This course can be used for exploring the electronics field. More serious electronics students should select other courses.

**GTC 94 Introduction to Motorcycle Safety & Maintenance
3 cr. hrs./6 periods (3 lec., 3 lab)**

An introductory course acquainting students with safe operational procedures plus evasive and defensive techniques. Routine maintenance and emergency repairs are taught with emphasis on diagnosing two and four cycle engine malfunctions.

GTC 95 Furniture Upholstery Techniques/3 cr. hrs./4 periods (2 lec., 2 lab)

Students learn the techniques and procedures for upholstering furniture: methods of constructing frames, the use of power sewing machines, pattern marking and selecting fabrics.

GTC 97 Woodshop II/3 cr. hrs./5 periods (2 lec., 3 lab)

Students are taught the fundamentals of cabinet making and furniture construction: wood preparation, finishing, cabinet and furniture design, and cost estimating.

GTC 98 Animal Genetics/3 cr. hrs./3 periods/3 lec.

Primarily for persons interested in breeding small animals. Emphasized are the practical applications of genetic principles. This is a general interest course.

GTC 99 Blueprint Reading/3 cr. hrs./3 periods/3 lec.

The study of symbols and language of blueprints to provide students with the ability of interpreting construction and engineering drawings.

**GTC 219 Industrial Data Acquisition & Control Systems
6 cr. hrs./8 periods (4 lec., 4 lab)**

☐ Prerequisites: ETR 105, ETR 110. Co-requisite, ETR 276 or equivalent.

This course is designed to familiarize the student with modern, computer-based data acquisition and industrial control systems. Integration of various electronic components; i.e., analog to digital converters, signal conditioning circuits, and micro-computers into systems will be discussed in the lectures and explored in laboratory exercises.

**GTC 220 Applications of Industrial Data Acquisition and Control Systems
6 cr. hrs./8 periods (4 lec., 4 lab)**

☐ Prerequisite: GTC 219.

This course is a sequel to Industrial Data Acquisition and Control Systems. Topics to be discussed include: data communication techniques, transducer interfacing, and intrinsic safety. The problems of systems application discussed in the course lectures will be explored in laboratory exercises.

GERMAN**GER 110-111 Elementary German I, II/4-4 cr. hrs./4 periods/4 lec.**

☐ Prerequisite: GER 110 or one year high school German for GER 111.

Simple conversations, reading and writing short compositions introduce the beginner to the German language. Readings and audio-visual materials are selected on the basis of revealing the life and culture of German-speaking countries. Qualified students may register for GER 111.

GER 210-211 Intermediate German I, II/4-4 cr. hrs./4 periods/4 lec.

☐ Prerequisites: GER 111 or equivalent for GER 210, GER 210 or equivalent for GER 211. Intensive reading, small group discussions and instruction are used to develop a deeper understanding of the German language and culture.

GER 240 Independent Study in German/1-4 cr. hrs./1-4 periods (lab)

☐ Prerequisite: Consent of Instructor.

Students pursue independent study in literature and grammar under the guidance of a faculty member.

GRAPHIC TECHNOLOGY

GRA 101 Graphic Technology I/3 cr. hrs./4 periods (3 lec., 1 lab)

The various concepts of graphic reproduction and their application; and the position held by the graphic communications industry in today's economy. Students will complete either a term paper or a laboratory experiment relating to an individual reproduction interest.

GRA 102 Graphic Technology II/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: GRA 101.

A survey of the graphic arts industry: fundamental printing processes of offset lithography, silkscreen, electrostatics, gravure, design, copy preparation, bindery operations, phototypographic techniques, and composite paste-up for camera ready copy. Field trips to local printing plants are included.

GRA 103 Binding and Finishing Processes/3 cr. hrs./5 periods (2 lec., 3 lab)

Students become familiar with a variety of modern binding equipment and also develop proficiency in the use of the commercial power cutter, folder, paper drill, stitcher, perforator and collators. The organization, administration and operation of plant finishing processes are discussed and demonstrated.

GRA 104 Offset Photography—Stripping and Platemaking 3 cr. hrs./5 periods (2 lec., 3 lab)

Stress on the use of the process camera and the theory and practice of producing quality line negatives. Content includes the use of various light sensitive materials, darkroom chemistry, use of filters, stripping techniques, practice in stripping simple jobs for offset duplicators, basic tools, equipment and types of layouts. (formerly GRA 201)

GRA 201 Color Theory and Practice/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: GRA 104.

The theory and practice of matching and mixing ink for the offset process, the proper selection and use of photographic filters and their darkroom application—with difficult camera copy and experience in the production of uncorrected 3-color process separations. (formerly GRA 104)

GRA 202 Offset Presswork/3 cr. hrs./5 periods (2 lec., 3 lab)

The theory, operation and minor maintenance of small offset duplicators.

GRA 203 Estimating of Printing and Materials/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: GRA 101 or equivalent work experience.

Students gain experience in estimating costs involved in reproduction and are exposed to the importance of paper and ink, their uses, storage and problems.

GRA 221 Advanced Stripping and Platemaking for Color 3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: GRA 104, 201.

Students learn techniques used in publication and color stripping and also have an opportunity to do layout by using various types of impositions.

GRA 222 Advanced Offset Presswork/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: GRA 202.

A continuation of presswork to become more adept at applying theory and techniques related to the successful operation of large offset presses.

GRA 232 Offset Operations and Maintenance/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisites: GRA 202, 222.

Course includes printing half-tones, close register work, color ink mixing, multi-color printing, technical problems and minor maintenance of large offset presses.

GRA 299 Cooperative Graphic Technology/3 cr. hrs./16 periods (1 lec., 15 lab)

A supervised cooperative work program for students in a printing occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours (6 credit hours maximum for program requirements). Course objectives differ each semester.

GRAPHICS

GRC 70 Offset Printing/3 cr. hrs./5 periods (2 lec., 3 lab)

Practical experience in offset layout, camera work, stripping, platemaking, press work and bindery work.

GRC 85 Silkscreen Printing/3 cr. hrs./5 periods (2 lec., 3 lab)

Principles of silkscreening for commercial purposes with emphasis on hand-cutting film and photographic film. Students learn to work on various materials including fabric, metal and cardboard. Students successfully completing the course will be qualified for apprenticeship in the silkscreening industry.

HEALTH CARE

HCA 99 Independent Studies in Health Sciences/1–6 cr. hrs./3–18 periods (lab)

For special health-related projects, permitting students to conduct research and experimental work. Results of projects must be presented in manuscript form.

HCA 150 Skills for Allied Health Services/5 cr. hrs./11 periods (2 lec., 9 lab)

A one semester course providing training in skills for various health services. Upon completion, students may seek employment at a beginning level in health care facilities as a nurse's aide, nurse's assistant, etc.

HCA 154 Introduction to Health Care/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Consent of Instructor.

An introductory health course representing the nucleus of the health sciences programs. It spans the entire pattern of the health care delivery system and how it relates to the patient as a person. Students also learn health science fundamentals.

HEALTH CONTINUING EDUCATION

HCE 55 School Health Aide Practicum/3 cr. hrs./3 periods/3 lec.

An examination of advanced first aid and emergency care practices including poisoning, drowning, specific injuries, sudden illness and emergency childbirth.

HCE 100A Assessment and Identification of Practical Nurse Educational Needs 1 cr. hr./1 period/1 lec./individualized instruction

This is the first module in a series of practical nurse updates. Students may reality-validate the educational needs of nursing content and competence under simulated mini-review examinations and evaluations. The opportunity for assessment and counseling is provided students to ascertain individualized vocational update needs. This module must be taken by all students prior to the selection of one or all of the following modules.

HCE 100B The Body as an Integrated Whole/1 cr. hr./2 periods (.5 lec., 1.5 lab)/individualized instruction

☐ Prerequisite: HCE 100A.

This module stresses the body as an integrated whole with emphasis on the erect and moving body, coupled with the hazards of immobility on the body systems and nursing care of the client/patient with disorders of the musculo-skeletal systems. Foundations for the preparation and administration of drugs and solutions of each system are incorporated into the module.

HCE 100C Maintenance and Metabolism of the Body—Cardiovascular and Gastro-Intestinal Systems/1 cr. hr./2 periods (.5 lec., 1.5 lab)/individualized instruction

☐ Prerequisite: HCE 100A.

This module stresses the maintenance and metabolism of the body with emphasis on the cardiovascular and gastro-intestinal systems. Assessment of the development of nutritional patterns and therapies related to the target systems are incorporated in the module objectives. Foundations of the preparation and administration of drugs and solutions of each system are an integral part of the module.

HCE 100D Maintenance and Metabolism of the Body—Respiratory and Excretory Systems/1 cr. hr./2 periods (.5 lec., 1.5 lab)/individualized instruction

☐ Prerequisite: HCE 100A.

This module stresses maintenance and metabolism of the body with emphasis on the respiratory and excretory systems. Foundations for the preparation and administration of drugs and solutions of each system are incorporated in the module.

HCE 100E Practical Nurse Update: Maternity/1 cr. hr./2 periods (.5 lec., 1.5 lab)

☐ Prerequisite: HCE 100A.

This module offers the necessary information to allow a practical nurse to update theory, skills and practicum in maternity nursing.

HCE 100F Practical Nurse Update: Pediatric/1 cr. hr./2 periods (.5 lec., 1.5 lab)

☐ Prerequisite: HCE 100A.

This module offers the necessary information to allow a practical nurse to update theory, skills and practicum in pediatric nursing.

HCE 100G Practical Nurse Update: Psychiatric/1 cr. hr./2 periods (.5 lec., 1.5 lab)

☐ Prerequisite: HCE 100A.

This module offers the necessary information to allow a practical nurse to update theory, skills and practicum in psychiatric nursing.

HCE 110 Approaches to Long-Term Care: An Overview/3 cr. hrs./3 periods/3 lec.

Health care providers, social workers and others gain knowledge and limited experience in caring for disabled adults and/or aged persons outside of institutions. Course content includes the aspects and processes of aging, common health problems and disabilities, adaptations to aging and disability, and resources available for long-term care of disabled adults.

HCE 112 Drugs and Nursing Implications/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Consent of Instructor.

Provides practical knowledge of drug classifications, a review of physiology and pathophysiology as a basis for therapeutic use of drugs and implications for nursing.

HCE 114 Beginning Physical Assessment/1 cr. hr./1 period/1 lec.

☐ Prerequisite: LPN's and RN's and students currently enrolled in a nursing program.

Covers basic interviewing skills and assessments of the head, chest, abdomen, integumentary, musculo-skeletal and nervous systems. This course is not intended to cover critical care nursing.

HCE 121 Registered Nurse Refresher/8 cr. hrs./16 periods (4 lec., 12 lab)

☐ Prerequisite: Registration as a nurse in the State of Arizona. Class open only to those who have not practiced for five years.

An opportunity for registered nurses to review and update their nursing knowledge and skills. Direct nursing care can be administered to patients upon completion of the course. Included is a review of team leadership, pediatric, maternity and psychiatric nursing.

HCE 131 Operating Room Specialty/7 cr. hrs./15 periods (3 lec., 12 lab)

☐ Prerequisite: Registered Nurse

Designed to provide the necessary knowledge and skills for the registered nurse who is interested in becoming an operating room specialist. Curriculum is based on the ADRN educational guidelines providing lectures, skills practice and clinical application.

HEALTH EDUCATION

HED 136 Introduction to Health Science/3 cr. hrs./3 periods/3 lec.

Students may select topics such as traumatic injuries, communicable diseases, nutrition, mental health, environmental health problems, or socio-medical problems including venereal diseases, drug use and abuse, alcoholism and abortion. The focus is on preventive health measures and public health services.

HED 137 Elementary School Health Education/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: HED 136 or consent of instructor.

Course assists the prospective teacher and health worker in developing learning activities which focus on health information as it pertains to the elementary age student.

HUMAN DEVELOPMENT EDUCATION

HDE 100 College Success Skills/1 cr. hr./1 period/1 lec.

This course will give students an opportunity to learn problem solving skills and to develop educational goals. Students will be introduced to college life and college/community services available. Sections may be taught for special groups.

✓ **HDE 120 Personal Development/1 cr. hr./1 period/1 lec.**

This course will help students discover and develop skills in identifying their personal strengths, values, and interests. Students will learn the skills needed to set personal goals. Skills useful in relating to others in groups on a one-to-one basis will be taught. Ways of improving self-confidence, problem solving, and decision making skills will also be explored. Sections may be taught for special groups.

✓ **HDE 130 Stress Management/2 cr. hrs./2 periods/2 lec.**

This course gives students an opportunity to learn about and experience different methods of dealing with stress. Students will learn how these different methods can be used in daily life. Special attention will be given to the kinds of stress encountered in college life and how these can affect physical and emotional health and the ability to learn.

✓ **HDE 140 Assertiveness Training/2 cr. hrs./2 periods/2 lec.**

This course gives students an opportunity to develop and strengthen their assertive skills. It will help students to gain confidence in themselves and to improve their ability to relate to others. Sections may be taught for special groups.

✓ **HDE 170 Dynamics of Leadership/2 cr. hrs./2 periods/2 lec.**

This course is designed to provide supervised practical training for advanced students involved in leadership positions. This course gives these students a chance to demonstrate and strengthen the leadership skills developed in previous courses. May be repeated once for credit.

✓ **HDE 190 Career Exploration/2 cr. hrs./2 periods/2 lec.**

This course will help the student in learning the skills necessary to make a career choice. Students will be helped to identify personal strengths, values, and motivations for making career decisions. Students will be shown various work opportunities and how these fit with the job market of tomorrow.

✓ **HDE 195 Securing a Job/1 cr. hr./1 period/1 lec.**

This course will help the student develop the skills and confidence necessary to get a job. Topics will include locating job openings, resume writing, and interview techniques. How to keep a job and to improve employment opportunities will also be studied.

HISTORY

✓ **HIS 76 Ghost Towns of the Southwest/3 cr. hrs./3 periods/3 lec.**

A survey of the socio-cultural heritage of the Southwest through its past communities—mining, milling, smelting, lumbering, ranching, farming, railroading and military—between the years of 1854 and 1917.

✓ **HIS 101–102 Introduction to Western Civilization I, II/3–3 cr. hrs./3 periods/3 lec.**

Surveys the historic development of Western man, going through the prehistoric age, ancient Greece, Rome, early Middle Ages and Renaissance to the Twentieth Century.

✓ **HIS 105 Introduction to Chicano Studies I/3 cr. hrs./3 periods/3 lec.**

The totality of Chicano life since 1848 and the struggle for self-determination.

✓ **HIS 106 Introduction to Chicano Studies II/3 cr. hrs./3 periods/3 lec.**

A review of the cultural, social and historical life of Chicanos as it developed from its ancient roots in Indo-America to the present.

✓ **HIS 135 Pre-Columbian Art/3 cr. hrs./3 periods/3 lec.**

A survey of the art of pre-Columbian Mexico. Students will learn to recognize major art styles and important sites. Course includes a survey of the art of the same time period in Southeastern and Southwestern America, Central America, and Peru. (Same as ANT-135 and ART-135)

✓ **HIS 136 Masks/3 cr. hrs./3 periods/3 lec.**

A survey of traditional masks and sculpture of Africa, North and South America, Asia and Oceania. Major emphasis is on style, function and meaning of the masks of the Northwest Coast Indians and of the indigenous peoples of Africa and the South Pacific. (Same as ANT-136 and ART-136)

✓ **HIS 141–142 History of the United States I, II/3–3 cr. hrs./3 periods/3 lec.**

A review of history from Jamestown to the present. Includes the founding and developing of American democracy, minority participation in making of the country, and the role of the United States in world affairs.

HIS 143-144 American Civilization I, II/3-3 cr. hrs./3 periods/3 lec.

A broad look, through many units, at the American experience with an emphasis on the cultural aspects.

HIS 145 Papago History and Culture/3 cr. hrs./3 periods/3 lec.

Where have the Papago people been, who are they, where are they going? In answering these questions, the class examines the history and culture of the Papago. (Same as ANT 145.)

HIS 147 History of Arizona/3 cr. hrs./3 periods/3 lec.

A look at Arizona history as a part of the Arizona-Sonora Desert area, moving from the pre-Colombian period through the Spanish conquest, Mexican Republic, U.S. Territory and statehood.

HIS 148 History of Indians of North America/3 cr. hrs./3 periods/3 lec.

Origin and distribution of native populations of North America; and the historical development and interrelations of cultures. (Same as ANT 148.)

HIS 149 History and Culture of the Mexican-American in the Southwest 3 cr. hrs./3 periods/3 lec.

Who is the Mexican-American? What is his cultural heritage, and what has happened to it in the United States? (Same as ANT 149.)

HIS 150 Afro-American History and Peoples/3 cr. hrs./3 periods/3 lec.

What does the Afro-American have to face because he is a Black in American society? His past, present and future are examined. (Same as ANT 150.)

HIS 151 Roots—History of American Blacks/3 cr. hrs./3 periods/3 lec.

A history of American Blacks based on the book "Roots" by Alex Haley which traces an American family through 200 years of history.

HIS 152 Roots—The Next Generation/3 cr. hrs./3 periods/3 lec.

This course covers the history of American Blacks from the emancipation and life in Henning, Tenn. to the present.

HIS 160 History and Peoples of Latin America I/3 cr. hrs./3 periods/3 lec.

The history of Latin America from the pre-Colombian period to the present with emphasis on the evolution of nationalism through the struggles for economic, cultural, political and social freedoms. (Same as ANT 160.)

HIS 161 History and Peoples of Latin America II/3 cr. hrs./3 periods/3 lec.

The emergence of nationalism and the struggles to achieve economic, social, cultural and political freedoms.

HIS 165-166 History of Mexico I, II/3-3 cr. hrs./3 periods/3 lec.

The student moves from the pre-Colombian era, through the Spanish conquest and a century of political and social upheaval, to the nation of social and economic stability.

HIS 165-166 Historia de Mexico I, II/3-3 cr. hrs./3 periods/3 lec.

Historia de Mexico. Se estudia una panorámica de la época precolonial, colonial y contemporánea.

HIS 170 History and Peoples of Africa/3 cr. hrs./3 periods/3 lec.

A survey of the political and cultural history of Africa south of the Sahara. (Same as ANT 170.)

HIS 175 History and Culture of the Yaqui People/3 cr. hrs./3 periods/3 lec.

A survey of the cultural heritage of the Yaqui people and the history of their struggles to protect Yaqui land and culture.

HIS 180 Women in Western History/3 cr. hrs./3 periods/3 lec.

A survey of the various roles women have had in the western world during the classic period, the medieval period and the modern age.

HIS 190 History of the American West/3 cr. hrs./3 periods/3 lec.

A three-module course encompassing military history, fact and folklore of the west, and lifestyle of the western people. Areas covered are frontier army life, military exploration of the west, lost mines, myths and realities of western heroes, transportation, ranching, establishment of cattle empires, and life of the cowboy.

HIS 190A Military History of the American West/1 cr. hr./1 period/1 lec.

Military history covers frontier army life, military exploration of the west, development of the military strategy and tactics of the western frontier, army life in the field and major military leaders of the American west.

HIS 190B Fact and Folklore of the American West/1 cr. hr./1 period/1 lec.

Fact and folklore covers lost mines in the west, the myths and realities of western heroes, and transportation: the pony express.

HIS 190C Lifestyle in the American West/1 cr. hr./1 period/1 lec.

Lifestyle covers ranching, motives for establishment of cattle empires, the range life of the cowboy, town life including gold, silver and copper camps, social life, town merchants and tradesmen.

HIS 195 History of Technology/3 cr. hrs./3 periods/3 lec.

Made up of the following three modules.

HIS 195A Early Development of Technology/1 cr. hr./1 period/1 lec.

An examination of technical science in the early stages of development as it responds to the growing complexity of human society. Areas covered are the nature, scope and impact on the technical sciences.

HIS 195B Comparative Development of Technology/1 cr. hr./1 period/1 lec.

An examination of the fundamental principles which contribute to the subsequent invention and innovation of the technical sciences. Areas covered are the approach to science, the adoption of chemicals, and the extension of technology.

HIS 195C Fundamental Development in Technical Sciences/1 cr. hr./1 period/1 lec.

An examination of major factors contributing to the present condition of technical programs including welding, machine tool, air conditioning, sheet metal and automotive mechanics.

HIS 201 Independent Studies in History/2-4 cr. hrs./6-12 periods (lab)

☐ Prerequisite: Consent of Instructor.

Independent history studies or projects arranged by the instructor.

HIS 201 Estudios Independientes en Historia/2-4 cr. hrs./6-12 periods (lab)

☐ Prerequisite: Consentimiento del instructor.

Consiste este curso, en estudios de historia, independientes, o proyectos de acuerdo con el instructor.

HIS 205 The Adams in U.S., 1750-1900/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: A first year course in U.S. history recommended.

A social history of the United States from 1750 to 1900 centered around the lives of four generations of the Adams family showing their role in the major events of the period.

HIS 249 Mexican-American Culture and Thought/3 cr. hrs./3 periods/3 lec.

A history of ideas of the Mexican-American from Nahua and Europe to the present. Brings out the evolution of the two into present day concepts such as "Raza de Bronce" and "Aztlán."

HIS 249 Pensamiento y Cultura del Mexico Americano/3 cr. hrs./3 periods/3 lec.

Historia del pensamiento del Mexico Americano desde su pasado Náhuatl y Europeo hasta el presente. Trae, hasta el presente, la evolución de ambas culturas hasta los actuales conceptos de "Raza de Bronce" y "Aztlán."

HOME ECONOMICS**HEC 99 Independent Studies in Home Economics/4 cr. hrs./18 periods (lab)**

☐ Prerequisite: Consent of Instructor.

Students pursue independent study under the guidance of an instructor.

HEC 117 Home Management/3 cr. hrs./3 periods/3 lec.

A study of individual and family resources designed for students interested in problems of management and the application to personal and family living.

HEC 127 Marriage and the Family/3 cr. hrs./3 periods/3 lec.

A study of the functions of the family and the effect of relationships within the family on the development of individuals in the home and community. (Same as SOC 127.)

HEC 128 Home Economics Profession/3 cr. hrs./3 periods/3 lec.

The history of home economics, its purposes and trends plus an explanation of professional opportunities in the field.

HEC 137 Today's World/3 cr. hrs./3 periods/3 lec.

A broad look at current issues on the international, national and local levels, and the relationship to the individual and selected career area.



✓ **HEC 160 Personal and Family Financial Security/3 cr. hrs./3 periods/3 lec.**

Stress is on personal and family financial affairs including budget, saving, credit, installment buying, insurance, home ownership, investment and estate planning.

✓ **HEC 299 Cooperative Home Economics Training
3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in any home economics occupation for an average of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

HOTEL-MOTEL MANAGEMENT

✓ **HMM 100 Introduction to Hotel-Motel Management/3 cr. hrs./3 periods/3 lec.**

For students having a career interest in the hotel-motel industry and for those wishing to develop or improve their job skills. Topics include the history, structure, social and economic backgrounds of the industry; the lodging market; the organization of hotel-motel operations; and career opportunities.

HMM 101 Front Office Procedures/3 cr. hrs./3 periods/3 lec.

For students who need to develop and improve job skills. Topics include guest services and creating a pleasant atmosphere; salesmanship aspects; accounting and control; and some legal aspects of innkeeping.

✓ **HMM 102 Hotel-Motel Accounting/3 cr. hrs./3 periods/3 lec.**

For students who need greater job skills. Topics include posting transactions; special journals and financial statements; and uniform system of accounts of the American Hotel and Motel Association.

✓ **HMM 103 Supervisory Housekeeping/3 cr. hrs./3 periods/3 lec.**

An introduction to the fundamentals of housekeeping management. Topics include employee training, record keeping, organization of the department, work methods, laundry equipment, cleaning materials and procedures, room design and linens, and safety.

✓ **HMM 104 Food and Beverage Management Service/3 cr. hrs./3 periods/3 lec.**

A complete survey of food and beverage operations from purchasing through service. Topics include menu planning; receiving, sorting and issuing; food production; food and beverage service; bar operations; budgeting and pre-control; operational analysis; sanitation; equipment layout and selection; and maintenance.

✓ **HMM 110 Hotel-Motel Operations/3 cr. hrs./3 periods/3 lec.
Offered Spring Semesters**

☐ Prerequisite: HMM 100 or consent of Hospitality Education Program Advisor.

Course provides an understanding of problem areas, basic management responsibilities and administration techniques. Topics cover sales promotion, guest relations, space utilization, accounting record keeping, operational controls, legal aspects, insurance, labor-management relations, and ethics.

✓ **HMM 111 Hospitality Management-Law/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: HMM 100 or consent of Hospitality Education Program Advisors.

Course includes study of contracts, torts, liability, and employee law. Hospitality industry related legislation and landmark cases are covered. Hospitality is a more inclusive term. Trade and industry journals and publications use "hospitality" to include: Hotels-motels, clubs, bars, restaurants conventions, and travel-tourism activities.

✓ **HMM 199 Cooperative Hotel-Motel Training/3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in hotel-motel occupations for a minimum of 15 hours per week. Course may be taken two times for a maximum of six credit hours. Course objectives differ each semester.

✓ **HMM 202 Advanced Hotel-Motel Accounting/3 cr. hrs./3 periods/3 lec.
Offered Spring Semesters**

Course develops a more comprehensive knowledge and skills in accounting practice and procedures for hotel-motel bookkeepers, accountants and managers. Topics include accounting concepts, principles and practices of financial accounting, managerial accounting for control and decision making, budgeting and cash control, and audit preparation.

HMM 203 Marketing of Hospitality Services/3 cr. hrs./3 periods/3 lec.

Offered Fall Semesters

□ Prerequisite: HMM 100 or consent of Hospitality Program Advisors.

A description and application of modern marketing techniques and concepts involving food and lodging industries. Topics include competitive forces; image and consumer demand; market research; planning strategy; advertising and cost benefit comparison.

HMM 204 Hotel-Motel Financial Management/3 cr. hrs./3 periods/3 lec.

Offered Spring Semesters

A study of food and lodging operations to determine profit as well as efficient provision and use of funds. Topics include financial statement analysis and interpretation, projection of working capital needs, debit financing, cash and expense control, and credit review.

HMM 299 Cooperative Hotel-Motel Training/3 cr. hrs./16 periods (1 lec., 15 lab)

A supervised cooperative work program for students in hotel-motel occupations for a maximum of 15 hours per week. Course may be taken two times for a maximum of six credit hours. Course objectives differ each semester.

HOUSEKEEPING—EXECUTIVE

HSK 150 Executive Housekeeping I/3 cr. hrs./3 periods/3 lec.

Offered Fall Semesters

Practical approaches to institutional housekeeping maintenance, custodial and environmental services; decor selection; and quantity purchasing of supplies within budgetary limitations.

HSK 151 Executive Housekeeping II/3 cr. hrs./3 periods/3 lec.

Offered Spring Semesters

A continued, practical, seminar treatment of the most efficient and economical application of an institutional housekeeping staff; maximum production with personnel and resources currently available.

HUMANITIES

HUM 60 Early Chinese Views of Social Change/3 cr. hrs./3 periods/3 lec.

This course, through a study of I Ching and Taoism, takes an unusual approach to social change.

HUM 110-111 Humanities I, II/4-4 cr. hrs./4 periods/4 lec.

An introduction to man's expressions in art, architecture, drama, music, literature, religion and philosophy. The first semester treats man's ideas and art from the rise of civilization through the Renaissance. The second semester continues with the rise of modern science through the present.

HUM 130 Independent Studies in Humanities/3 cr. hrs./3 periods/3 lec.

Study areas to be arranged with instructor.

HUM 131 Great Ideas, Mysticism, Mythology, Zen Meditation 3 cr. hrs./3 periods/3 lec.

Course is designed to respond to student interest in particular topics in humanities. Past studies have included Zen meditation, mythology and mysticism.

INSTITUTIONAL FOOD PREPARATION

IFP 10 Basic Nutrition for Cafeteria Personnel/2 cr. hrs./2 periods/2 lec.

Preparation for employment and upgrading of employees in institutional and commercial food services. The basic principles of nutrition, diet and food in its relation to health and child nutrition is taught.

IFP 11 Menu Planning For Cafeteria Personnel/2 cr. hrs./2 periods

Preparation for employment and upgrading of employees in institutional and commercial food services. The basic principles of menu planning as they relate to type A lunches and breakfast are taught.

IFP 14 Safety and Sanitation for Cafeteria/2 cr. hrs./2 periods/2 lec.

Preparation for employment and upgrading of employees in institutional and commercial food services. Procedures, rules and regulations for safety and sanitation in institutional kitchens will be taught.

✓ **IFP 20 Cafeteria Personnel: A Member of the Nutrition Team**
2 cr. hrs./2 periods/2 lec.

The role of school food service employees as a member of the Nutrition Education Team is taught.

✓ **IFP 21 Menu Evaluation for Cafeteria Personnel/2 cr. hrs./2 periods/2 lec.**

Students learn to construct a series of Type A menus. Nutritional analysis and evaluation of menus is taught.

✓ **IFP 22 Techniques of Training of Cafeteria Personnel/2 cr. hrs./2 periods/2 lec.**

Methods of personnel instruction and the development of in-service training is taught. Students learn to develop job descriptions, evaluations of personnel, and concepts of work scheduling.

✓ **IFP 23 Analysis Techniques of Engineered and Convenience Food for School Personnel/2 cr. hrs./2 periods/2 lec.**

Students are taught the formulation and techniques of purchasing and dispensing of products suitable for use in the cafeteria nutritional programs. Comparative costing and nutritional analysis of convenience foods are taught.

✓ **IFP 32 Food Analysis for School Cafeteria Personnel/2 cr. hrs./2 periods/2 lec.**

Reading and interpreting food specifications sheets and labels and relating this information to type A requirements. Efficient food preparation and waste is studied.

JOURNALISM

✓ **JRN 57 Journalism Workshop/3 cr. hrs./9 periods (lab)**

A laboratory course in which students gather, write and edit material for the college's weekly student newspaper.

✓ **JRN 101 Basic Reporting/3 cr. hrs./3 periods (2 lec., 1 lab)**

An introduction to evaluation of news, news gathering methods, writing leads, organization of stories, and experience in interviewing and writing various types of news stories. Course work requires considerable amount of writing.

✓ **JRN 110 Exploring Mass Media/3 cr. hrs./3 periods/3 lec.**

An evaluation of today's mass communications, the nature, function and the impact on society. Study includes a review of important journalists' work and a broad overview of performances by newspapers, radio, television, advertising and magazines. One major writing project is required of each student.

✓ **JRN 140 Photojournalism/3 cr. hrs./5 periods (2 lec., 3 lab)**

☐ Prerequisite: JRN 101 or consent of journalism department.

Reporting and interpreting news through pictures; a study, discussion and application of basic photography techniques to mass media; some layout; writing cutlines, captions and pictorial studies. May be applied to magazine journalism sequence in advance study.

✓ **JRN 160-169 Publications Writing and Production**
1-10 cr. hrs./1-18 periods (1-6 lec., 3-12 lab)

A series of 10 one credit-hour courses in which students learn and practice the skills of publications production. Each student is to select courses dependent upon background, experience, and interest. Student campus publications, including a campus newspaper, are projects of the courses.

✓ **JRN 160 Basic News Writing/1 cr. hr./1 period/1 lec.**

Basic news and feature story structure, leads, copy editing, interviewing, headline writing and proofreading.

✓ **JRN 161 Advanced News Writing/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: JRN 160.

Special types of stories, layout, photo-editing.

✓ **JRN 162 Newspaper Editing/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: JRN 161.

News sources, assignments, scheduling, editorial writing and management.

✓ **JRN 163 Basic Photo Journalism/1 cr. hr./1 period/1 lec.**

News value, pictorial quality, handling assignments and the picture story.

✓ **JRN 164 Newspaper Graphics/1 cr. hr./1 period/1 lec.**

Basic art work, typography and photo techniques.

✓ **JRN 165 Newspaper Business Procedures/1 cr. hr./1 period/1 lec.**

Advertising, circulation, record keeping and accounting.

✓ **JRN 166 Reporting Staff/1 cr. hr./3 periods (lab)**

☐ Prerequisite: JRN 160 or concurrent enrollment.

News, features and sports writing.

✓ **JRN 167 Editorial Staff/1 cr. hr./3 periods (lab)**

☐ Prerequisite: JRN 161.

Page editing and general editing experience.

✓ **JRN 168 Production Staff/1 cr. hr./3 periods (lab)**

Experience in layout, photo selection and sizing, paste-up, proofreading and other production activities.

✓ **JRN 169 Business Staff/1 cr. hr./3 periods (lab)**

Management, ad sales, circulation and clerical experience.

✓ **JRN 201 Advanced Reporting/3 cr. hrs./3 periods (2 lec., 1 lab)**

☐ Prerequisite: JRN 101.

Weekly writing assignments, investigative reporting, feature and editorial writing, copy-editing and headline writing, make-up and advertising. A required course for journalism majors.

✓ **JRN 215 Copy Editing and Design/3 cr. hrs./5 periods (2 lec., 3 lab)**

☐ Prerequisite: JRN 101.

A required class for journalism majors. Covers practicum in news room settings, editing and proofreading copy for publication and page layout, typography and design.

✓ **JRN 220 Broadcast Journalism/3 cr. hrs./3 periods/3 lec.**

A general study of broadcast journalism. Course acquaints the general public with broadcast news media, and gives the student interested in journalism a taste of electronic journalism. It also helps those in related fields, such as public relations and advertising, to better understand the broadcast news process.

✓ **JRN 250 Media Advertising and Public Relations/3 cr. hrs./5 periods (2 lec., 3 lab)**

☐ Prerequisite: JRN 101 or consent of journalism department.

Various professional techniques are provided in planning sales and production.

LEISURE TIME

✓ **LTS 1 Practicum I/1 cr. hr./2 periods (1 lec., 1 lab)**

Students experience on-the-job supervised training.

✓ **LTS 9 Restricted Sports and Games/1 cr. hr./2 periods (1 lec., 1 lab)**

Students select, under advisement of Human Resources faculty members, sports and games of a low motor level.

✓ **LTS 114 Adaptive and Corrective Programs/3 cr. hrs./3 periods/3 lec.**

A study of various programs and routines of physical rehabilitation in recreation and physical education. Different techniques of instruction and the recovery from disabilities are surveyed.

LIBRARY TECHNOLOGY

✓ **LMT 50 Library Resources/3 cr. hrs./3 periods/3 lec.**

An introduction to the basic library resources: catalogs, bibliographies, indices and reference materials. Also an introduction to periodicals and microforms.

✓ **LMT 51 Library Technical Services/4 cr. hrs./4 periods/4 lec.**

Ordering and processing procedures; cataloging and classification; records maintenance (shelf list, card catalog, order files); simple book repair; bindery records and procedures.

✓ **LMT 52 Library Public Services/3 cr. hrs./3 periods/3 lec.**

This course provides an introduction to public services. It includes circulation procedures and problems; charging systems and hardware; physical maintenance of library shelves; information services and reference assistance; public service ethics and relations.

✓ **LMT 299 Cooperative Library Technician Training
3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in a library technician occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

LIFE SCIENCES

LSC 22 Modern Concepts of Desert Ecology/1 cr. hr./1 period/1 lec.

This course shows the exciting relationship among living things of the Arizona-Sonora Desert. It also illustrates the need to understand how our desert ecological systems function and the symptoms of our failure to maintain their integrity.

LSC 80 Advanced Federal Lands Facility Planning and Visitor Services/1 cr. hr./3 periods (2 lec.; 1 lab)

This is a sequential four-day session during the spring recess. Students are introduced to the National Park Service basic law enforcement techniques, facility maintenance and planning, and environmental interpretation.

LSC 90 Range and Livestock Management/3 cr. hrs./3 periods/3 lec.

A practical course covering the infection, symptoms and treatment of livestock diseases, animal nutrition, and animal breeding. Range management techniques including fertilization, reseeding, and pasture rotation methods are discussed. Methods of range improvement, water structure, and range pest eradication are examined.

LSC 99 Anatomy and Physiology Review/1-3 cr. hrs./1-3 periods

A review of basic anatomy and physiology. This course is primarily for students who have taken a traditional course but may need a review and additional information about anatomy and physiology.

LSC 102 Principles of Human Anatomy and Physiology/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Not for biology or pre-med majors.

The study of the systems of the human body. Designed for students in health occupation programs which require a one-semester anatomy and physiology course or to fulfill a one-semester lab science requirement.

LSC 103 General Biology I/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Not for biology or pre-med majors.

An introductory biology course. Satisfies four units of Liberal Arts lab science requirements. This course provides the student with a macroscopic and microscopic view of his surroundings. Emphasis is on the cell and its function, reproduction, systems and ecology.

LSC 104 General Biology II/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 103 recommended.

This course continues a survey of the living world. Areas of study include origin of life, genetics, evolution, behavior and populations.

LSC 106 Survey of Human Diseases/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 102 or equivalent.

A study of disease processes and their effects on the systems of the human body. Designed for students in the health occupation programs, but is also open to students who wish to take a lab-science course.

LSC 112 Biology for Education Majors/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Not for science majors.

General biological principles are stressed as to their applicability to education majors and general interest students.

LSC 115 Human Ecology/4 cr. hrs./5 periods (3 lec., 2 lab)

☐ Not for science majors.

Focus is on the question of survival for mankind and other life forms, exploring both present problems and alternatives for the future. Included are lectures, discussions and field trips. (Same as ESC 115.)

LSC 117 Introduction to Infectious Diseases/3 cr. hrs./3 periods/3 lec.

☐ Generally not transferable for science majors.

Designed for students in health occupations and open to others interested in the cause and control of infectious and communicable diseases. Epidemiology is emphasized.

LSC 120 Human Anatomy and Physiology I/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: REA 100 series and CHM 110 or equivalent. (Not for biology or pre-med majors.)

A study of the structure and function of the body, emphasizing cellular and biochemical aspects. Includes an introduction to cells and tissues and to the skeletal, muscular, endocrine and reproductive systems. Designed for students in health careers.

LSC 121 Human Anatomy and Physiology II/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 120 or consent of instructor.

A continuation of the study of the systems of the body. Includes the circulatory, respiratory, digestive, urinary and nervous systems.

LSC 150 Ecology I/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 103–104, or one year of biology, or consent of instructor. (Not for science majors.)

Emphasis on basic principles and concepts. Includes the development of an ecological vocabulary, learning methodology and techniques of ecological study, understanding relative position of groups of organisms with respect to food chains, predator-prey relations, energy cycles, and physical and biological factors.

LSC 151 Ecology II/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 150.

A quantitative and qualitative study of geographical biomes. Includes a survey of evolution, distribution, speciation, specific niches and size of population in each biome.

LSC 170 Conservation of Natural Resources/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Enrollment in natural resources option of the recreation program or consent of instructor.

The historical basis for current problems in the conservation of natural resources and the application of basic ecological concepts toward the solution of wise utilization and preservation.

LSC 171 Survey of Western Flora/3 cr. hrs./5 periods (2 lec., 3 lab)

A survey of western flora with emphasis on local plants. Plant adaptation, distribution and environmental implications are stressed.

LSC 172 Survey of Western Vertebrates/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: One year of college life science or consent of instructor.

A survey of western fish, amphibians, reptiles, birds and mammals with emphasis on adaptations, distribution and environmental requirements.

**LSC 173 Introduction to Game Management
3 cr. hrs./5 periods (2 lec., 3 lab)**

☐ Prerequisite: LSC 150–151 or consent of instructor.

Basic biological and ecological principles are explored as they relate to compatible methods of managing wildlife populations under range and forest conditions.

LSC 174 Introduction to Watershed Problems/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Enrollment in natural resources option of the recreation program or consent of instructor.

How biological agents of forest diseases and insects are related to the physical factors of local soil type, topography and geology in describing the efficiency, development and management practices of watershed areas.

**LSC 196 Independent Studies in Life Sciences
1–4 cr. hrs./3–12 periods (lab)**

Subject matters and approaches vary with student interests and reasons for enrolling.

The range is from exploratory students wanting to gain insights into biology to honors biology majors wishing to do advanced work.

LSC 205 Organismic Biology I/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: CHM 120 and concurrent enrollment in CHM 121, or concurrent enrollment in CHM 120 with consent of instructor.

The study of plants and animals primarily at the organ-system of observation. Topics include chemical structure and functions of cells and tissues. Emphasis is on plant structure and development. Intended for biology, pre-medical, pre-veterinary, science majors.

LSC 206 Organismic Biology II/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 205.

A continuation of LSC 205 with emphasis on animal physiology and development. Topics include comparative anatomy, physiology, embryology, phylogeny and systematics of plant and animal taxa.

LSC 207 Microbiology I/4 cr. hrs./7 periods (3 lec., 4 lab)

Emphasis is on the characteristics of microbes; the influences both of microbes on man and his environment and of man on the microbial environment.

LSC 208 Microbiology II/4 cr. hrs./7 periods (3 lec., 4 lab)

☐ Prerequisite: LSC 207.

This course has a medical orientation. Topics cover infection and immunity by a variety of microbial agents on a variety of hosts.

LSC 210 General Genetics/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 205–206, CHM 120–121, CHM 240 and concurrent enrollment in CHM 241.

The student planning to major in biology is introduced to the basic principles and concepts of genetics.

LSC 220 Botany I/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 103–104 or one year of biology or consent of instructor.

A comparative survey of each system of the plant kingdom emphasizing morphology, physiology, systematics, growth and propagation. Special section on “plants useful to man.”

**LSC 299 Cooperative Natural Resource Management Technician Training
3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in a natural resource management technician occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

LITERATURE

LIT 80 Papago Literature Workshop/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: Some knowledge of Papago or concurrent enrollment in PGO 50.

An exposure to Papago tales and legends in the native language. Tales are studied in both written and oral form. Those in oral form will be written down and translated into English. Tales from different villages also are compared and contrasted both in content and dialect variation.

LIT 130 Afro-American Literature/3 cr. hrs./3 periods/3 lec.

A survey of Afro-American literature, its cultural and historical roots, and its relationship to other ethnic literature in America.

LIT 131 Introduction to Shakespeare/3 cr. hrs./3 periods/3 lec.

This course familiarizes the student with eight of Shakespeare's major dramas. The student is made aware of relevant history and social conditions as well as literary background. Some attention is given to plays as stage vehicles.

LIT 162 Introduction to Literature II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit. LIT 162 options: Science Fiction, Women, Mystery Fiction, Modern Drama.

An 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, modern drama, mystery fiction. Emphasis is on works of high literary merit.

LIT 166 Themes in American Literature/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

A semester-long study of American literature which deals with a specific theme such as individualism, or nature, or the outsider. Works of major authors are included plus a variety of genres including novels, drama, and poetry appropriate to the theme.

LIT 241–242 Introduction to World Literature I, II/3–3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

An introduction to classic European literature with major authors studied in depth. The first semester deals with ancient and medieval works and the second semester with those since the Renaissance. May be taken as a humanities elective. (formerly LIT 141–142)

LIT 261 Introduction to Literature I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

An introduction to drama, fiction, and poetry to promote appreciation and understanding of these forms. Some major works are explored in depth through analysis and discussion. May be taken as a humanities elective. (formerly LIT 161)

LIT 265 Major American Authors/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

A survey of selected works by major American authors from the colonial period to the present. May be taken as a humanities elective. (formerly LIT 165)

LIT 270 Survey of English Literature I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

A survey of English literature from the Anglo-Saxon period through the Eighteenth Century. Some major authors are studied in depth. May be taken as a humanities elective. (formerly LIT 170)

LIT 271 Survey of English Literature II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

A survey of English literature from the Eighteenth Century to the present. Some major authors are studied in depth. May be taken as a humanities elective. (formerly LIT 171)

LIT 272 Major British Writers/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: WRT 101 and 102 for transfer credit.

Selected representative works by major authors exclusive of Shakespeare. The selections include a broad range of periods and types of literature. May be taken as a humanities elective. (formerly LIT 172)



MACHINE TOOL TECHNOLOGY

✓ **MAC 110 Machine Shop for Technicians I/4 cr. hrs./8 periods (2 lec., 6 lab)**

Covers preliminary machine shop, introduction to machine tools, their range of application and capacity.

✓ **MAC 120 Machine Shop for Technicians II/4 cr. hrs./8 periods (2 lec., 6 lab)**

□ Prerequisite: MAC 110, concurrent with MTH 120.

General shop practice including a thorough training in machine tool set-up, operation and cutting tool techniques.

✓ **MAC 130 Basic Metallurgy/3 cr. hrs./3 periods/3 lec.**

The study of steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals, and non-destructive testing.

✓ **MAC 135 Physical Metallurgy/3 cr. hrs./4 periods (2 lec., 2 lab)**

□ Prerequisite: MAC 130.

The behavior of metals in their service to industry during heating, cooling, shaping, forming and stress. Mechanical properties and tests to determine values; heat treatment of steel; pure metals and manner of crystallization; theory of alloys; and non-ferrous metals.

✓ **MAC 210 Jig and Fixture Designing I/4 cr. hrs./6 periods (3 lec., 3 lab)**

□ Prerequisite: MAC 120.

The design and application of tools, jigs and fixtures for basic metalworking and machine tools.

✓ **MAC 220 Jig and Fixture Designing II/4 cr. hrs./6 periods (3 lec., 3 lab)**

□ Prerequisite: MAC 210.

Course enables the technician to lay out design of machine parts, working with government standards and the preparation of drawings for numerically controlled machines.

✓ **MAC 230 Quality Control/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: MTH 120, MAC 120.

Students get a practical working knowledge of quality control methods and equipment. Theories of statistical quality control and true position dimensioning also are covered.

✓ **MAC 235 Quality Control Certification Refresher/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: Background and experience in Quality Control Engineering.

A refresher course in preparing for the Quality Control Engineer certification offered through the American Society for Quality Control.

✓ **MAC 240 Manufacturing Processes I/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: MAC 120.

Provides a background knowledge on various manufacturing materials and fundamental types of manufacturing methods. Automation is introduced to acquaint the student with modern practice of numerical control.

✓ **MAC 245 Manufacturing Processes II/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: MAC 240.

A background in casting and foundry practices. The student becomes familiar with the production of simple molds, core and casting and in basic heat treatment inspection and testing using both destructive and non-destructive methods.

✓ **MAC 250 Introduction to Numerical Control/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: MTH 120, MAC 120.

The student is introduced to numerical control and its application to machines, processes and manufacturing processes. The basics of manual programming for point-to-point and absolute position machines are covered. Occupational opportunities also are reviewed. (Same as CSC 250.)

✓ **MAC 255 Numerical Controlled Machines/3 cr. hrs./4 periods (2 lec., 2 lab)**

□ Prerequisite: MAC 120, 250.

This course starts continuous path programming and computer aided programming. Calculations are made manually and by computer for two and three axis numerical control machines. Numerical control languages are taught. (Same as CSC 255.)

✓ **MAC 299 Cooperative Machine Tool Training/3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in a machine tool occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

MANAGEMENT

✓ **MAN 110 Human Relations in Business and Industry/3 cr. hrs./3 periods/3 lec.**

Students study organization and how its functioning is affected by many human factors. Areas of interest are motivation, problem solving techniques, group process and organizational environment.

✓ **MAN 122 Supervision/3 cr. hrs./3 periods/3 lec.**

A study of the origin of personnel supervision; an analysis of the components of recruitment, training and evaluation of employees; elements of decision making; and the role of labor unions.

✓ **MAN 124 Small Business Management/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: ACC 101.

Analysis of the practical problems of organizing and managing a successful small business enterprise. Emphasis is on the managerial activities of the entrepreneur and their application to good business practice. Practical problems in quantitative analysis, causes of business failure, record keeping, sales promotion and marketing, budgeting, employee relations, and small business case studies are considered.

✓ **MAN 276 Personnel Management/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: BUS 100.

Covers practical aspects of managing personnel; includes recruiting, selection, testing, rating systems, promotion, discipline, training, labor relations, job evaluation and manpower planning. Intended for the practitioner in personnel management as well as the general manager.

✓ **MAN 278 Labor/Management Relations/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: BUS 100.

Covers the history and development of American unionism, government of trade unions, collective bargaining, public policy, and bargaining power, with special emphasis on contemporary issues. Reviews basic legal framework regulating labor/management relations. A primary objective is consideration of the pragmatic issues involved in building a sound relationship between management and labor.

✓ **MAN 280 Business Organization and Management/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: ACC 101, ECO 100.

A study of the role of management in business and other human endeavors; management as a total system of functions utilizing resources within constraints imposed by society, the body politic, technology and ideology; management as a situational integration of diverse philosophies.

✓ **MAN 299 Cooperative Management Training/3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in a management occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

MARKETING

✓ **MKT 111 Marketing/3 cr. hrs./3 periods/3 lec.**

The basic principles involved in the movement of goods and services from producer to consumer. The functions of marketing and institutions of manufacturing, wholesaling and retailing.

✓ **MKT 113 Salesmanship/3 cr. hrs./3 periods/3 lec.**

A study of the basic principles and techniques of selling and their practical application; types of customers, products, information and its presentation, determination of customer's wants and needs, meeting customer objections, and opportunities in selling.

✓ **MKT 125 Advertising/3 cr. hrs./3 periods/3 lec.**

A basic understanding of the various aspects of advertising including its planning and creation.

✓ **MKT 127 Advertising Layout and Design/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: MKT 125.

A workshop in present day creative advertising with practice in all current media. Actual practice, criticism and field trips included.

✓ **MKT 139 Retailing/3 cr. hrs./3 periods/3 lec.**

The organization and operation of a retail store; trends in the field; problems involved in the retailing of goods and services.

✓ **MKT 140 Consumer Experience/3 cr. hrs./3 periods/3 lec.**

Emphasizes the role of consumer behavior, the strategies wise consumers adopt in buying goods and services, financial responsibilities, consumer protection, fraudulent schemes, budgeting framework, and contemporary personal finance problems.

✓ **MKT 141 Consumer Behavior/3 cr. hrs./3 periods/3 lec.**

A discussion and explanation of individuals deciding whether, what, when, where, how and from whom to purchase goods and services.

✓ **MKT 299 Cooperative Marketing Training/3 cr. hrs./16 periods (1 lec., 15 lab)**

A supervised cooperative work program for students in a marketing occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

MATHEMATICS

(A satisfactory placement test score may be requested in lieu of, or in addition to, the listed prerequisites for any course. Students who have credit in any college mathematics course equivalent to or above MTH 60 will not receive credit for MTH 60 or any of its components—without permission of the mathematics area.)

✓ **MTH 60 Introductory Mathematics/3 cr. hrs./3 periods/3 lec.**

Mathematics 60A through 60C collectively comprise MTH 60.

✓ **MTH 60A Introductory Mathematics—Whole Numbers (Module I)
1 cr. hr./1 period/1 lec.**

Topics include operations with whole numbers, placed value and order of operations. (This course is usually offered in a five-week module—3 periods/week.)

✓ **MTH 60B Introductory Mathematics—Fractions and Decimals (Module II)
1 cr. hr./1 period/1 lec.**

□ Prerequisite: MTH 60A or equivalent.

Course covers operations with common and decimal fractions, powers of ten and scientific notation. (This course is usually offered in a five week module—3 periods/week.)

✓ **MTH 60C Introductory Mathematics—Percent, Ratio and Measurement (Module III)/1 cr. hr./1 period/1 lec.**

□ Prerequisite: MTH 60B or equivalent.

Topics include percent, ratio and proportion, measures, metric system and applications. (This course is usually offered in a five-week module—3 periods/week.)

✓ **MTH 65 Health Careers Mathematics/3 cr. hrs./3 periods/3 lec.**

This course provides the necessary mathematical skills for nursing and chemistry. It covers fractions, decimals, equations, scientific notation, apothecary and metric measures, dosages, concentrations and logarithms.

✓ **MTH 70 Algebra I/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: MTH 60 or equivalent.

Mathematics 70A through 70C collectively comprise MTH 70.

✓ **MTH 70A Algebra I—Linear Equations and Graphs (Module I)
1 cr. hr./1 period/1 lec.**

□ Prerequisite: MTH 60 or equivalent.

Topics include signed numbers, order of operation, inverse operation, linear equations and straight line graphs. (This course is usually offered in a five week module—3 periods/week.)

✓ **MTH 70B Algebra I—Binomials and Quadratics (Module II)
1 cr. hr./1 period/1 lec.**

□ Prerequisite: MTH 70A.

Included in the course are operations with first and second degree polynomials, factoring, quadratic equations and their graphs. (This course is usually offered in a five week module—3 periods/week.)

✓ **MTH 70C Algebra I—Algebraic Expressions and Fractions (Module III)
1 cr. hr./1 period/1 lec.**

□ Prerequisite: MTH 70B.

Included in the course are algebraic fractions, fractional equations and integral exponents. (This course is usually offered in a five week module—3 periods/week.)

MTH 90 Elementary Geometry/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 70 or equivalent.

A study of angles, parallel and perpendicular lines, triangles, quadrilaterals and circles, congruence, similar figures, geometric constructions and deductive proofs. Primarily for students who lack credit in high school geometry.

MTH 101 Slide Rule/1 cr. hr./1 period/3 lec.

A programmed learning class—students may enter at any time. Students work at their own pace on scientific notation, estimation, multiplication, division, powers roots and trig scales.

MTH 102 Calculators/1 cr. hr./1 period/1 lec.

Topics include H.P.-35, H.P.-45, Texas Instrument calculator and option. This is a programmed learning class and students may enter at any time. Students work at their own pace.

MTH 103 Computer Terminal/1 cr. hr./1 period/1 lec.

Numerical calculation and program writing. This is a programmed learning class. Students may enter at any time and work at their own pace.

MTH 110 Technical Mathematics/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 60 or equivalent.

Includes basic algebra for solving equations and using formulas; basic geometry for layout of mechanical structures and computing areas and volumes.

**MTH 110A Technical Mathematics I: Arithmetic and Geometry
1 cr. hr./1 period/1 lec.**

☐ Prerequisite: MTH 60.

Topics include a review of arithmetic operations, percent, measurements, basic geometry involving perimeters, areas and volumes.

MTH 110B Technical Mathematics I: Algebra, Part I/1 cr. hr./1 period/1 lec.

☐ Prerequisite: MTH 110A.

Topics include basic algebraic operations, linear equations, and factoring.

MTH 110C Technical Mathematics I: Algebra, Part II/1 cr. hr./1 period/1 lec.

☐ Prerequisite: MTH 110B.

Topics include algebraic fractions, graphs of equations and systems of linear equations.

MTH 115 Electronics Mathematics I/3 cr. hrs./3 periods/3 lec.

Basic algebra, electronic calculator, slide rule, simultaneous equations, Kirchoff's law, trigonometry and AC circuit analysis.

MTH 120 Technical Mathematics II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 110.

Basic trigonometry, exponents, radicals, scientific notation, logarithms, slide rule and practical problem solving.

**MTH 120A Technical Mathematics II: Exponents and Radicals
1 cr. hr./1 period/1 lec.**

☐ Prerequisite: MTH 110 or MTH 110C.

Topics include exponents, scientific notation, roots and radicals.

**MTH 120B Technical Mathematics II: Quadratic Equations and Logarithms
1 cr. hr./1 period/1 lec.**

☐ Prerequisite: MTH 120A.

Topics include quadratic equations and logarithms.

**MTH 120C Technical Mathematics II: Basic Trigonometric Functions
1 cr. hr./1 period/1 lec.**

☐ Prerequisite: MTH 120B.

Topics include trigonometric functions, graphs, vectors, and solutions of right and oblique triangle problems.

MTH 125 Electronics Mathematics II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 115.

Computer number systems, Boolean algebra, advanced AC circuit analysis, logarithms and decibels.

- ✓ **MTH 130 Algebra II/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: MTH 70 or equivalent.
 Mathematics 130A, 130B, and 130C collectively comprise MTH 130.
- ✓ **MTH 130A Algebra II—Polynomials (Module I)/1 cr. hr./1 period/1 lec.**
☐ Prerequisite: MTH 70C or equivalent.
 This module includes operations of polynomials, linear equations, systems of linear equations, and inequalities including functional notation, graphing and determinants.
- ✓ **MTH 130B Algebra II—Factoring and Radicals (Module II)/1 cr. hr./1 period/1 lec.**
☐ Prerequisite: MTH 130A or equivalent.
 This module includes products, factoring, algebraic fractions, fractional equations, exponents and radicals.
- ✓ **MTH 130C Algebra II—Quadratic Equations and Logarithms (Module III) 1 cr. hr./1 period/1 lec.**
☐ Prerequisite: MTH 130B or equivalent.
 This module includes quadratic equations, complex numbers, variation and logarithms.
- ✓ **MTH 135 Survey of Math Thought/4 cr. hrs./4 periods/4 lec.**
☐ Prerequisite: MTH 60C or equivalent.
 A study of the role of mathematics in society through the nature of mathematics and its historical, cultural and humanistic effects on civilization.
- ✓ **MTH 140 Math for Elementary Education Majors I/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: MTH 70 or equivalent.
 Topics include sets, arithmetic operations and their properties, measurement, metric system, percent, decimals and fractions.
- ✓ **MTH 145 Math for Elementary Education Majors II/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: MTH 140.
 Includes properties of the sets of integers, rational numbers and real numbers, algebra and geometry for elementary school students. Required for students majoring in elementary education.
- ✓ **MTH 150 College Algebra/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: MTH 130.
 Quadratic and higher degree equations, polynomial, exponential and logarithmic functions, determinants, matrices, systems of equations, sequences and the binomial theorem.
- ✓ **MTH 150A College Algebra: Equations and Functions/1 cr. hr./1 period/1 lec.**
☐ Prerequisite: MTH 130.
 Topics include linear, quadratic and radical equations; relations, functions and transformations; equations of a line and graphing parabola.
- ✓ **MTH 150B College Algebra: Linear Systems, Matrix Operations and Certain Functions/1 cr. hr./1 period/1 lec.**
☐ Prerequisite: MTH 150A.
 Topics include exponential and logarithmic functions, linear systems of equations and inequalities, determinants, matrix operations and inverses.
- ✓ **MTH 150C College Algebra: Polynomials, Inequalities, Sequences and Series 1 cr. hr./1 period/1 lec.**
☐ Prerequisite: MTH 150B.
 Topics include complex numbers, polynomial theory of equations, sequences and series, binomial expansion, induction and inequalities in two variables.
- ✓ **MTH 155 Trigonometry/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: MTH 150 or concurrent enrollment.
 Angular measure, trigonometric functions, graphs, identities, equations, inverse trigonometric functions, and solutions of right and oblique triangles.
- ✓ **MTH 160 College Algebra and Trigonometry/5 cr. hrs./5 periods/5 lec.**
☐ Prerequisite: MTH 130.
 Includes all topics in MTH 150 and 155. Recommended for students planning to take analytic geometry and calculus.
- ✓ **MTH 170 Finite Mathematics/3 cr. hrs./3 periods/3 lec.**
☐ Prerequisite: MTH 150.
 Includes set theory, logic, partitions, permutations, combinations, probability, Bernoulli trials and Markov chains. For students majoring in business.

MTH 175 Topics in Calculus/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 150.

Includes limits, continuity, differentiation and integration of algebraic functions, application to business and separable differential equations. For students majoring in business.

MTH 180 Analytic Geometry and Calculus I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 150 and 155 or MTH 160.

Straight lines, conic sections, limits, continuity, differentiation and integration of algebraic functions, applications of derivatives, areas and volumes.

MTH 185 Analytic Geometry and Calculus II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 180.

A continuation of MTH 180. Includes differentiation and integration and ideology; management as a situational integration of diverse philosophies.

MTH 210 Introductory Statistics/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 130.

Averages, standard deviation, frequency distributions, central limit theorem, confidence intervals, correlations, probability, normal curve and tests of hypothesis.

MTH 215 Analytic Geometry and Calculus III/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: MTH 185.

A continuation of MTH 185. Includes polar coordinates, solid geometry, two and three dimensional vectors, infinite series, moments, partial derivatives and multiple integration.

MTH 219 Differential Equations/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MTH 215.

Differential equations of order one and degree one, linear equations, non-homogeneous equations, and series solutions.

MTH 220 Linear Algebra and Differential Equations/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: MTH 215.

Vectors, bases, linear independence, matrices, linear transformations; differential equations of order one and degree one, linear equations, non-homogeneous equations, and series solutions.

MEDIA TECHNOLOGY

MET 50 Communigraphics I/3 cr. hrs./3 periods/3 lec.

Course covers the fundamentals of basic design in relationship to space, line and layout of elements for application to various types of media. Studied are commercial design, industrial design, typography, animation, design for television, design for printed media and special photography methods.

MET 53 Cinematography I/3 cr. hrs./3 periods/3 lec.

Covered are the techniques of basic 8mm motion picture production; camera operation; techniques of animation application; film editing; and motion picture lab processes. The entire class is involved in the production and concept of one major film.

MET 70 Equipment Repair and Maintenance/3 cr. hrs./3 periods/3 lec.

Electrical and mechanical repair and also maintenance of instructional media technology equipment including tape recorders, projectors, and mechanical graphic arts devices.

MET 81 Instructional Media Technology I/3 cr. hrs./3 periods/3 lec.

Areas covered are still projection, motion picture projection, graphic arts, record players, tape recorders, broadcast sound systems, educational TV, programmed instruction, supporting equipment for instructional media, non-projected instructional media materials.

MET 82 Instructional Media Technology II/3 cr. hrs./3 periods/3 lec.

The functions and responsibilities of the media specialist in an industrial or educational audio-visual department; various procedures in ordering, inventory, maintenance and budgeting for media operation; the responsibilities and opportunities for media specialists. Media facilities are designed, and equipment evaluated. Discussed are legal aspects of media production involving copyright.

MET 84 Implications of Media Technology/3 cr. hrs./3 periods/3 lec.

The effects of media technology on the individual and his society covering multi-media, computer-managed instruction, computer-assisted instruction, audio-tutorial systems, television, radio, film, programmed instruction, dial-access systems, man-machine relationships in systems approaches to solving teaching-learning problems.

- ✓ **MET 90 Telecommunications—Television Production/3 cr. hrs./3 periods/3 lec.**
Students learn to function as part of television production crews. They learn to operate and work with all the basic tools, equipment and techniques used in television production.
- ✓ **MET 91 Telecommunications—Television Workshop**
4 cr. hrs./6 periods/ (2 lec., 4 lab)
☐ Prerequisite: MTH 90.
Experience in the production of various types of television programs. Emphasis is on the production of special programs for educational community and industrial use; and the utilization of television equipment in remote and on-location sites as well as in studio operation.
- ✓ **MET 299 Cooperative Media Technician Training/3 cr. hrs./16 periods (1 lec., 15 lab)**
☐ Prerequisite: 14 hours in program or equivalent in general and technology courses, or consent of instructor.
A supervised cooperative work program for students in an instructional media technology occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

MILITARY SCIENCE (AIR FORCE)

- ✓ **MLA 101 The U.S. Air Force Today I/2 cr. hrs./2 periods (1 lec., 1 lab)**
A review of the history, functions and organization of the Air Force, Air Force doctrine and national strategy, and strategy offensive forces. (Course offered in cooperation with University of Arizona.)
- ✓ **MLA 102 The U.S. Air Force Today II/2 cr. hrs./2 periods (1 lec., 1 lab)**
Strategic defensive forces, U.S. general purpose forces, and the support commands and operating agencies of the Air Force. (Course offered in cooperation with U of A.)
- ✓ **MLA 203 U.S. Air Force History I/2 cr. hrs./2 periods (1 lec., 1 lab)**
The chronological development of air power from the advent of the air age through World War II. (Course offered in cooperation with U of A.)
- ✓ **MLA 204 U.S. Air Force History II/2 cr. hrs./2 periods (1 lec., 1 lab)**
The development of the Air Force from 1946 to the present. (Course offered in cooperation with U of A.)

MILITARY SCIENCE (ARMY)

- ✓ **MSC 101 Introduction to ROTC/2 cr. hrs./4 periods (1 lec., 3 lab)**
Reviews the history, organization and mission of ROTC and the military and civilian obligation of the citizen. There also is an introduction to weapons and the leadership laboratory. (Course offered in cooperation with University of Arizona.)
- ✓ **MSC 102 Defense Establishment in National Security**
2 cr. hrs./4 periods (1 lec., 3 lab)
The history, mission and organization of the defense establishment; the role of the military in cold, limited and general warfare. Leadership laboratory included. (Course offered in cooperation with U of A.)
- ✓ **MSC 203 American Military History/2 cr. hrs./4 periods (1 lec., 3 lab)**
Principles of war and a survey of American military history are studied from colonial times to 1966. Leadership laboratory included. (Course offered in cooperation with U of A.)
- ✓ **MSC 204 Military Map Reading and Tactics/2 cr. hrs./2 periods/2 lec.**
An introduction to maps, map reading and the Lensatic compass. Also an introduction to small unit tactics. Leadership laboratory included. (Course offered in cooperation with U of A.)

MUSIC

MUS 45 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

Course offers a private weekly lesson with an instructor but without a jury exam requirement. Course of study jointly determined by the instructor and the student. Development of performance skills is stressed. Non-transferrable.

- Section 1—Brass
- Section 2—Guitar
- Section 3—Organ
- Section 4—Percussion
- Section 5—Piano
- Section 6—Strings
- Section 7—Voice
- Section 8—Woodwinds

MUS 46 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

☐ Prerequisite: MUS 45.

Course offers a private weekly lesson with an instructor but without a jury exam requirement. Course of study jointly determined by the instructor and the student. A continuation of performance skills development. Non-transferrable. (see MUS 45 for sections offered)

MUS 47 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

☐ Prerequisite: MUS 46.

Course offers a private weekly lesson with an instructor but without a jury exam requirement. Course of study jointly determined by the instructor and the student. A continuation of performance skills development. Non-transferrable. (see MUS 45 for sections offered)

MUS 48 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

☐ Prerequisite: MUS 47.

Course offers a private weekly lesson with an instructor but without a jury exam requirement. Course of study jointly determined by the instructor and the student. A continuation of performance skills development. Non-transferrable. (see MUS 45 for sections offered)

MUS 54 Jazz Improvisation/1 cr. hr./2 periods (1 lec., 1 lab)

☐ Prerequisite: MUS 103.

The study of jazz improvisation on various instruments. Emphasis is on the rhythmic, melodic and harmonic aspects of jazz styles. Membership is determined by audition with instructor. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken 2 times for a maximum of 2 credits.

MUS 91 Guitar Class I/1 cr. hr./2 periods (1 lec., 1 lab)

Beginning instruction and development of basic skills for both hands. Emphasis is on fingering and picking styles, chords and melodic reading in first position.

MUS 92 Guitar Class II/1 cr. hr./2 periods (1 lec., 1 lab)

☐ Prerequisite: MUS 91 or consent of instructor.

Continuation of MUS 91 with more detailed study of chord structures, scales, and melodic reading through the fourth position.

MUS 102 Introduction to Music Theory/3 cr. hrs./3 periods/3 lec.

An introductory course in fundamental music theory designated to develop basic literacy in music. The course consists of the study of notation, melody, harmony, rhythm and musical terminology in a format for those who have little or no background in music theory.

MUS 103 Music Theory I/4 cr. hrs./5 periods (3 lec., 2 lab)

An integrated study of elementary standard structure of traditional music, the ordinary treatment and notation. Includes principles of harmony, melody and rhythm, developing the ability to notate what is heard and vice versa, and applying these principles on the piano in creative harmonization. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony. These segments may be studied separately as non-transferable courses.

MUS 120 Band/2 cr. hrs./5 periods (1 lec., 4 lab)

Participation in regular band rehearsals and performances with membership determined by auditions with the director. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of eight credit hours.

- ✓ **MUS 121 Jazz Band/1 cr. hr./3 periods (1 lec., 2 lab)**
Rehearsal and performance of many styles of music in the jazz idiom. Open to all students through a conference and audition with the instructor. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of four credit hours.
- ✓ **MUS 123 Instrumental Ensemble/1 cr. hr./2 periods (1 lec., 1 lab)**
Course offers an opportunity for supervised rehearsal and performance of literature for various instrumental combinations. It is open to all students through a conference and audition with the instructor. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of four credit hours.
- ✓ **MUS 130 Chorale (SATB)/2 cr. hrs./5 periods (1 lec., 4 lab)**
A selected group of mixed voices, chosen by audition, for interpretation of a wide variety of styles of music in concerts throughout the academic year. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of eight credit hours.
- ✓ **MUS 131 College Singers (SATB)/2 cr. hrs./5 periods (1 lec., 4 lab)**
A small choral ensemble chosen by audition. Repertory and performance includes best literature from all styles and periods. There are various performances throughout the academic year. Open to all qualified students in the college. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of eight credits.
- ✓ **MUS 132 Women's Chorus/1 cr. hr./3 periods (1 lec., 2 lab)**
Rehearsal and performances of choral literature written for women's voices. A short audition is necessary for voice placement. Minimum of one performance per semester. Open to all qualified students in the college. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of four credit hours.
- ✓ **MUS 133 Concert Choir (SATB)/1 cr. hr./3 periods (1 lec., 2 lab)**
The concert choir is chosen from those who wish to participate in choral music but for various reasons are not in chorale. A short audition is necessary for voice placement. Open to all qualified students. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of four credits.
- ✓ **MUS 134 Vocal Ensemble/1 cr. hr./2 periods (1 lec., 1 lab)**
Course offers an opportunity for supervised rehearsal and performance of literature for various combinations. It is open to all students through a conference and audition by the instructor. Progressive development of musical skills through interpretation of literature is stressed. Course may be taken four times for a maximum of four credits.
- ✓ **MUS 136 Voice Class I/1 cr. hr./2 periods (1 lec., 1 lab)**
Beginning instruction, introduction and development of basic skills, breathing, diction, tone, rhythm and sight-singing. Practical training in singing without specialization. Open to all students.
- ✓ **MUS 137 Voice Class II/1 cr. hr./2 periods (1 lec., 1 lab)**
☐ Prerequisite: MUS 136.
A continuation of MUS 136.
- ✓ **MUS 141 Piano Class I/1 cr. hr./2 periods (1 lec., 1 lab)**
Beginning instruction employing group and individual techniques in an electronic lab situation; introduction and development of elements of basic musicianship and keyboard skills. Open to all students.
- ✓ **MUS 142 Piano Class II/1 cr. hr./2 periods (1 lec., 1 lab)**
A continuation of MUS 141. Previous piano experience required.
- ✓ **MUS 143 Piano III/1 cr. hr./2 periods (1 lec., 1 lab)**
Advanced piano instruction utilizing group and individual techniques in an electronic lab situation. Continued development of keyboard skills and musical proficiency.
- ✓ **MUS 144 Piano IV/1 cr. hr./2 periods (1 lec., 1 lab)**
☐ Prerequisite: MUS 141, 142, 143
A continuation of MUS 143. Previous piano experience required. (Equivalent to three semesters.)

MUS 145 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

Course offers a private weekly lesson with an instructor and participation in student recitals and jury exams.

- Section 1—Brass
- Section 2—Guitar
- Section 3—Organ
- Section 4—Percussion
- Section 5—Piano
- Section 6—Strings
- Section 7—Voice
- Section 8—Woodwinds

MUS 146 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

☐ Prerequisite: MUS 145.

Course offers a private weekly lesson with an instructor and participation in student recitals and jury exams. A continuation of performance skills development. (see MUS 145 for sections offered)

MUS 151 Exploring Music/3 cr. hrs./3 periods/3 lec.

An introductory course in the study of various musical styles with an emphasis on listening and application of the basic elements of music (melody, rhythm, harmony, form, timbre) to each style. Open to all students.

MUS 201 History and Literature of Music I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MUS 103.

A study of music literature with emphasis on structure, period and style. Literature includes the Greeks through the Baroque. This course is required of all music majors. May be taken as a humanities option.

MUS 202 History and Literature of Music II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MUS 201.

A study of music literature with emphasis on structure, period and style. Literature includes the Rococo through the present day. This course is required of all music majors. May be taken as a humanities option.

MUS 204 Music Theory II/4 cr. hrs./5 periods (3 lec., 2 lab)

☐ Prerequisite: MUS 103.

The theory of music in the pre-tonal styles with emphasis on medieval and Renaissance works. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony.

MUS 205 Music Theory III/4 cr. hrs./5 periods (3 lec., 2 lab)

☐ Prerequisite: MUS 103.

The theory of music in tonal styles. Emphasis is on Baroque, Classical and Romantic period works, and on the development of hearing, singing and keyboard skills. Study concentrates on tertiary harmonic construction from seventh chord through borrowed, altered and eleventh/thirteenth chords, as well as melodic, rhythmic and formal aspects of styles involved. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony.

MUS 206 Music Theory IV/4 cr. hrs./5 periods (3 lec., 2 lab)

☐ Prerequisite: MUS 103.

The theory of music in post-tonal styles with emphasis on Twentieth Century composition and on the development of hearing, singing and keyboard skills. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony.

MUS 207 New Music Composition/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MUS 103

Composition of music using new resources, techniques, and notational systems. Includes exposure to and analysis of new music.

MUS 211 Basic Conducting Techniques I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: MUS 103 or consent of instructor.

Development of fundamental conducting skills with emphasis on basic techniques, organizational problems, materials and interpretation of representative literature.

MUS 247 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

☐ Prerequisite: MUS 146.

Course offers a private weekly lesson with an instructor and participation in student recitals and jury exams. A continuation of performance skills development. (see MUS 145 for sections offered)

MUS 248 Applied Music—Private Instruction/2 cr. hrs./½ period/½ lec.

☐ Prerequisite: MUS 247.

Course offers a private weekly lesson with an instructor and participation in student recitals and jury exams. A continuation of performance skills development. (see MUS 145 for sections offered)

MUS 290A Independent Studies In Music/1 cr. hr./3 periods (1 lec., 2 lab)

☐ Prerequisite: Instructor's approval.

The student must submit a program plan of research and/or in-depth study for approval by the supervising instructor. The assigned credit must be designated at the time of approval.

MUS 290B Independent Studies In Music/1 cr. hr./3 periods (1 lec., 2 lab)

☐ Prerequisite: Instructor's approval.

The student must submit a program plan of research and/or in-depth study for approval by the supervising instructor. The assigned credit must be designated at the time of approval.

MUS 290C Independent Studies In Music/1 cr. hr./3 periods (1 lec., 2 lab)

☐ Prerequisite: Instructor's approval.

The student must submit a program plan of research and/or in-depth study for approval by the supervising instructor. The assigned credit must be designated at the time of approval.

NURSING

NRS 70 Nursing I/8 cr. hrs./16 periods (4 lec., 12 lab)

☐ Prerequisite: Admission granted by the Allied Health Services Selection Committee.

A systematic approach to decision making provides a framework for learning the roles and responsibilities of the practical nurse. It is an introduction to comprehensive patient centered nursing utilizing an understanding of health, total needs, major health problems, and nursing processes. Basic knowledge and skills required to render quality nursing and to implement therapeutic techniques are integrated into the three components of the course: theory, skills, and supervised clinical practice.

NRS 72 Nursing II/9 cr. hrs./19 periods (4 lec., 15 lab)

☐ Prerequisite: NRS 070.

Emphasis is on using the nursing process to assess problems and needs that frequently occur in pregnancy, infancy, childhood, adolescence and adulthood. Planning individualized patient care, growth and development nutrition, drug therapy, and cultural influence are integrated into the three components of the course: theory, skills and supervised clinical practice.

***NRS 170 A.D. Nursing I/8 cr. hrs./16 periods (4 lec., 12 lab)**

☐ Prerequisite: Chemistry 110 or equivalent. Completion of reading requirement.

Introduces students to the nursing process, wellness-illness continuum, man and his basic needs. Included is an introduction to roles and responsibilities of the registered nurse in relationship to the health team.

***NRS 172 A.D. Nursing II/9 cr. hrs./19 periods (4 lec., 15 lab)**

☐ Prerequisite: NRS 170.

Builds upon concepts introduced in Nursing 170 with continued emphasis on the care of the hospitalized adult and special emphasis on maternal-child health.

NRS 280 A.D. Nursing III/9 cr. hrs./19 periods (4 lec., 15 lab)

☐ Prerequisite: NRS 172.

Builds upon concepts in nursing skills presented in 170 and 172. Focuses on utilization of the nursing process in increasingly complex care of clients of all ages who have common and recurring medical-surgical problems.

NRS 282 A.D. Nursing IV/9 cr. hrs./19 periods (4 lec., 15 lab)

☐ Prerequisite: NRS 280.

Major emphasis on complex client care in a variety of hospital and community settings. Included in this course is an emphasis on medical-surgical nursing, mental-health nursing, principles of management, current nursing trends, and legal and ethical responsibilities of the nurse.

***Self-Paced Nursing courses are offered for NRS 170 and 172.**

Admission is determined by nursing program policy.

OFFICE EDUCATION

✓ OED 60 **Notehand/2 cr. hrs./2 periods/2 lec.**

An intensive course in a shorthand system to be used for personal notetaking. Practice in taking useful, well-organized lecture and conference notes is stressed.

✓ OED 70 **Upgrading Office Skills/3 cr. hrs./3 periods/3 lec.**

This course includes assessment and evaluation, review, improvement and new techniques in office skills and human relations. Designed for persons with previous office training who wish to re-enter the secretarial field or upgrade their present position.

✓ OED 80 **Stenoscrypt I/3 cr. hrs./4 periods (2 lec., 1 lab)**

This course teaches the basic system of alphabetic shorthand. Basic theory, brief forms, phrasing, vocabulary, grammar, punctuation, letter styles, and transcription techniques are taught.

✓ OED 81 **Stenoscrypt II/3 cr. hrs./4 periods (2 lec., 2 lab)**

This course teaches students the advance system of alphabetic shorthand. Theory, brief forms, phrasing, vocabulary, grammar, punctuation, letter styles, and transcription.

✓ OED 90 **Typing Refresher/3 cr. hrs./3 periods (2 lec., 1 lab)**

A review course for students having some typing skills. Emphasis is on the practice of using the keyboard, speed drills, practice letters and manuscripts.

✓ OED 91 **Shorthand Refresher/3 cr. hrs./3 periods/3 lec.**

A review of the principles of Gregg, Forkner, and Century 21 shorthand systems with emphasis on the ability of applying the shorthand theory to new words. Concentration is on taking dictation up to at least 80 words per minute. (formerly GOE 91)

✓ OED 101 **Shorthand I/3 cr. hrs./5 periods (3 lec., 2 lab)**

☐ Prerequisite: OED 111 or concurrent enrollment or one year of typing; OED 154 recommended.

A first-semester course in shorthand using Gregg and Century 21 systems. Designed to develop skills in taking simple dictation and transcribing at the typewriter. Emphasis is on the mechanics of written English.

✓ OED 102 **Shorthand II/3 cr. hrs./5 periods (3 lec., 2 lab)**

☐ Prerequisite: One year high school shorthand or dictation speed of 50 wpm with typewriter transcription at minimum of 95 percent accuracy; OED 154 or concurrent enrollment.

A review of Gregg, Century 21, and Forkner shorthand through dictation practice and emphasis on shorthand speed development and accuracy in typed transcription.

✓ OED 103 **Records Management/3 cr. hrs./3 periods/3 lec.**

The principles and procedures of filing and actual practice in the basic filing systems. Course also deals with methods of storing and retrieving information and plans for retention, transfer and disposal of records.

✓ OED 103A **Records Management A/1 cr. hr./1 period/1 lec.**

This module includes the indexing, coding, cross-referencing and alphabetizing of personal and business names.

✓ OED 103B **Records Management B/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: OED 103A or equivalent.

This module includes the indexing, coding, cross-referencing and alphabetizing of governmental agencies and other names. Alphabetical correspondence is included. The module also deals with methods of storing and retrieving information and plans for retention, transfer and disposal of records.

✓ OED 103C **Records Management C/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: OED 103B or equivalent.

A study of filing procedures used in subject, numeric and geographic filing.

✓ OED 111 **Typing I/3 cr. hrs./5 periods (3 lec., 2 lab)**

A beginning course in the theory and practice of touch typing. Emphasis is on the mastery of the keyboard, speed drills and practice. Letters, manuscripts and tabulations are included.

✓ OED 111A **Typing I: Keyboard Presentation and Basic Techniques 1 cr. hr./1.7 periods (1 lec., .7 lab)**

Keyboard presentation and basic typing techniques and procedures. Speed and accuracy development is included. For five weeks.

✓ **OED 111B Typing I: Basic Correspondence and Centering**

1 cr. hr./1.7 periods (1 lec., .7 lab)

☐ Prerequisite: OED 111A or equivalent.

Basic centering and correspondence. Speed and accuracy development is included. For five weeks.

✓ **OED 111C Typing I: Correspondence and Manuscripts**

1 cr. hr./1.6 periods (1 lec., .6 lab)

☐ Prerequisite: OED 111B or equivalent.

Tabulation, correspondence and manuscripts. Speed and accuracy development is included. For five weeks.

✓ **OED 112 Typing II/3 cr. hrs./5 periods (3 lec., 2 lab)**

☐ Prerequisite: One year of typing or a typing speed of 30 wpm.

A further development of typing techniques, skill and knowledge. Accurate proofreading and a concept of mailability are stressed. Letters, manuscripts, tabulations, memorandums and business forms.

✓ **OED 121 Calculating Machines/2 cr. hrs./3 periods (2 lec., 1 lab)**

Instruction covers the operation of the electronic calculator for mathematical computation in the modern business world. Also includes practical business applications such as discounts, commissions, percentage, proration, interest and mark-up.

✓ **OED 122 Word Processing/4 cr. hrs./6 periods (4 lec., 2 lab)**

☐ Prerequisite: OED 112 or typing speed of 40 wpm and ability to type letters; manuscripts and tables; OED 154 recommended.

Specific procedures, methods and equipment used for transcription of written, verbal or recorded ideas into typewritten or printed form. Includes work on transcription equipment, proportional-spacing typewriters, composing machines and magnetic tape typewriters. Instruction in duplicating equipment includes photocopiers, the spirit and stencil duplicators and offset press.

Note: Students may satisfy the requirements of OED 122 by taking OED 122A, B, D, or OED 122, C, D. No more than 4 credits may be earned for OED 122 or any combination of OED 122A, B, C, D.

✓ **OED 122A Word Processing Reprographics/1 cr. hr./1.5 periods (1 lec., .5 lab)**

☐ Prerequisite: OED 112 or typing speed 40 wpm and ability to type letters, manuscripts and tables; OED 154 recommended.

Introduction to word processing and survey of duplicating methods and equipment used in offices. Photocopy, spirit, stencil and offset processes are covered.

✓ **OED 122B Word-Processing-Special Typewriters/1 cr. hr./1.5 period (1 lec., .5 lab)**

☐ Prerequisite: OED 112 or typing speed 40 wpm and ability to type letters, manuscripts and tables. OED 154 recommended.

Includes work on dual-pitch, self-correcting, proportional-spacing and word processing typewriters.

✓ **OED 122C Word Processing-Beginning Machine Transcription**

2 cr. hrs./3 periods (2 lec., 1 lab)

☐ Prerequisite: OED 112 or typing speed 40 wpm and ability to type letters, manuscripts and tables. OED 154 recommended.

Techniques and equipment for basic transcription. Includes development of punctuation, grammar, and spelling skills using general business correspondence.

✓ **OED 122D Word Processing-Advanced Machine Transcription/2 cr. hrs./3 periods (2 lec., 1 lab)**

☐ Prerequisite: OED 112 or typing speed 40 wpm and ability to type letters, manuscripts and tables. OED 154 recommended.

A further development of machine transcription techniques, with emphasis on mailability and transcription speed development. Legal, medical, and general business correspondence is included.

✓ **OED 130 Commercial and Technical Spanish/2 cr. hrs./2 periods/2 lec.**

☐ Prerequisite: Spanish proficiency in speaking and writing.

The Spanish language as a business skill. The course is specially planned for the bilingual secretary or office employee. Emphasis is on business terms and the Spanish language as used in the southwestern United States and in Mexico. Includes practice in taking dictation and transcribing in both languages.

OED 130 Español Comercial/2 cr. hrs./2 periods/2 lec.

Se enseña el español especializado para negocio para obtener aptitudes necesarias de secretaria bilingüe o trabajadora (trabajador) de oficina. El énfasis es sobre términos de negocios y el idioma español como se emplea en el suroeste de los Estados Unidos y México. Se practicará el dictado y la transcripción en ambos idiomas.

OED 154 Business English/3 cr. hrs./3 periods/3 lec.

An in-depth study of English fundamentals essential for modern business communication, including grammar, punctuation, spelling and word usage. Not a writing course. It deals with the parts of speech and application of rules concerning items such as capitalization, verb tenses, sentence structure, plurals, possessives, etc.

OED 158 Machine Shorthand/3 cr. hrs./4 periods (3 lec., 1 lab)

☐ Prerequisite: OED 111 or concurrent enrollment or one year typing.

Basic touch shorthand theory with speed developed to 80 words per minute. Emphasis is on reading skills.

OED 166 Medical Office Procedures/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: OED 112 or equivalent.

Designed for students planning to work in a physician's office, clinic or hospital. Includes instruction in keeping patient records, preparation and handling of insurance forms and medical reports, handling patients and other duties typical of an assistant in a medical office.

OED 180 Legal Terms/3 cr. hrs./3 periods/3 lec.

Provides an understanding of legal terms for students interested in working in a legal office as legal secretaries or technicians. Special emphasis is given to pronunciation, spelling and definition.

OED 250 Legal Secretarial Procedures/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: OED 252 or equivalent.

Provides a knowledge and understanding of terminology and procedures of a law office involving wills, domestic relations cases and foreclosures. Human relations and the code of ethics for legal secretaries are included. Typing proficiency is stressed.

OED 251 Legal Secretarial Procedures II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: OED 250 or law office experience and typing. Provides a knowledge and understanding of terminology and procedures for a law office including personal injury, probate, corporate and criminal law. Human relations and the code of ethics for legal secretaries are included. Typing proficiency is stressed.

OED 252 Typing III/3 cr. hrs./5 periods(3 lec., 2 lab)

☐ Prerequisite: Two years of typing or 40 wpm; OED 154 recommended.

High level skills in techniques of touch typing are developed with a standard of mailability for all production work stressed. Office typing problems include manuscripts, correspondence, tables, business forms, executive and legal work. Independent performance is encouraged.

OED 253 Shorthand III/3 cr. hrs./5 periods(3 lec., 2 lab)

☐ Prerequisite: Two years of shorthand or 70 wpm; OED 154 or concurrent enrollment.

A further development of shorthand skills and transcription techniques. Emphasis is on progressive speed development, grammar, spelling, punctuation, and production of mailable letters. Both timed and office-style dictation are included.

OED 255 Medical Terms/3 cr. hrs./3 periods/3 lec.

Course provides an understanding of terminology essential to the medical business office. Emphasis is on understanding and ease in using medical terms.

OED 256 Medical Transcription/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: OED 255 or knowledge of medical terminology and typing speed of 40 wpm.

Course develops speed and accuracy in typing, skill in using transcribing equipment and expansion of medical terminology. Practice in transcribing medical reports and correspondence is emphasized.

OED 257 Office Procedures/4 cr. hrs./5 periods(3 lec., 2 lab)

☐ Prerequisite: OED 112 or equivalent.

A study of functions and procedures used in a wide range of office activities. Includes analysis of the secretarial profession, techniques to improve office efficiency and development of a secretarial personality.

OED 259 Business Communications/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: OED 154.

The general principles of effective communication as well as techniques pertinent to specific types of business correspondence. Social and business writing, claim and adjustment letters, interoffice memos, sales letters, credit letters, collection letters and letters of application and data sheets are covered.

OED 264 Shorthand IV/3 cr. hrs./5 periods(3 lec., 2 lab)

☐ Prerequisite: OED 253 or equivalent; OED 154 is recommended.

A production course which offers an opportunity to develop techniques and skills of high quality. Course content includes shorthand, typewriting, spelling, punctuation, word usage, proofreading, editing and other related topics. A standard of mailability is stressed.

OED 299 Cooperative Office Education Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in an office education occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

OPHTHALMIC DISPENSING

ODT 51 Optical Orientation I/6 cr. hrs./8 periods(5 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.

This course covers the role of the ophthalmic laboratory, laboratory technician, dispensing optician, optometrist, ophthalmologist, etc.; and basic information of lenses refractive errors, frame construction, repair and laboratory organization.

ODT 52 Optical Orientation II/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: ODT 51.

Introduction to frame measurements, reading prescriptions and frame adjusting, types of single vision and multi-focal lenses, frames and manufacturers.

ODT 53 Optical Laboratory/3 cr. hrs./7 periods(1 lec., 6 lab)

☐ Prerequisite: ODT 51.

Lens surfacing, layouts, base curves, thickness, lens blanks, hardening, lens edging and insertion.

ODT 54 Optical Dispensing I/6 cr. hrs./10 periods(4 lec., 6 lab)

☐ Prerequisite: ODT 51, 52, 53.

Facial measurements, adjusting, frame selection, vocational glasses, lens and frame design.

ODT 55 Contact Lenses I/5 cr. hrs./7 periods(4 lec., 3 lab)

☐ Prerequisite: ODT 51, 52, 53.

Basic information on the anatomy and physiology of the eye for contact lens fitting. Introduction to fitting procedures.

ODT 56 Ophthalmic Assistant/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: ODT 51, 52, 53.

Optical instrumentation, field charting, visual skills, tangent screen, taking case histories, office procedures, etc.

ODT 57 Contact Lenses II/5 cr. hrs./7 periods(4 lec., 3 lab)

☐ Prerequisite: ODT 55.

The theory and practice of contact lens fitting optics, corneal measurements, lens check-outs, adjusting, bifocal and toric contact lenses and patient control.

ODT 58 Optical Dispensing II/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: ODT 51, 52, 53, 54.

Cataract lenses, adjusting, styles, record keeping, problem prescriptions and optical dispensary organization.

ODT 59 Senior Seminar/2 cr. hrs./2 periods/2 lec.

☐ Prerequisite: ODT 51 through 56.

Ethics of the profession, complete review of all material for state board examination, state laws and program evaluation.

**ODT 299 Cooperative Ophthalmic Dispensing Training
3 cr. hrs./16 periods(1 lec., 15 lab)**

☐ Prerequisite: ODT 51 through 56.

A supervised cooperative work program for students in an ophthalmic dispensing occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

PAPAGO

PGO 50 Elementary Papago/4 cr. hrs./4 periods/4 lec.

This is a conversation course with emphasis on listening and repetition. Designed for the non-Papago speaking students.

PGO 51 Papago for Native Speakers/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: Knowledge of Papago.

Class needs will be determined due to different speaking dialects.

PHILOSOPHY

PHI 101-102 Introduction to Philosophy I, II/3-3 cr. hrs./3 periods/3 lec.

Course seeks to provide the student with a second grasp of the principles of abstract reasoning, and instances of their application to life. For the prospective philosophy major, it offers a thorough foundation through some of the main themes and figures in the history of western philosophy. May be taken as humanities option.

PHI 120 An Introduction to Logic/3 cr. hrs./3 periods/3 lec.

The objective of this course is to increase the student's awareness of the requirements and processes of valid thinking, decision-making and communication.

PHI 130 Introductory Studies in Ethics and Social Philosophy 3 cr. hrs./3 periods/3 lec.

An introduction to the study of such matters as judgments of approval and disapproval, the rightness and wrongness of our acts, and the desirability or wisdom of our actions. Students study classical and contemporary meanings of ethical statements, their truth and falsity, their objectivity and subjectivity. May be taken as humanities option.

PHI 140 Philosophy of Religion/3 cr. hrs./3 periods/3 lec.

An introduction to the philosophical study of religion. (Same as REL 140.)

PHI 145 Historical Philosophy/3 cr. hrs./3 periods/3 lec.

Course is designed to respond to student interest in the study of particular topics of philosophy. Past studies have included Plato, Hume, Aesthetics, and Philosophy of Feminism.

PHYSICAL DISTRIBUTION

PYD 101 Physical Distribution Systems/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: BUS 100.

A job skill improvement course for developing a concept and working knowledge of physical distribution systems. Topics include a conceptual framework, transportation systems, inventory control, warehousing, order processing, industrial packaging, material handling and locational analysis.

PYD 102 Traffic Management and Distribution/3 cr. hrs./3 periods

☐ Prerequisite: PYD 101.

Traffic management and distribution techniques are covered in detail. Topics include commodity classification, transport pricing as an element of system costs, tariff constraints and simplifications, evaluative factors in routing, documentation and carrier liability, legal implications, transport policies and programs, and international distribution.

PHYSICAL EDUCATION

PED 1 Practicum I/1 cr. hr./3 periods (lab)

The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 2 Practicum II/1 cr. hr./3 periods (lab)

The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 3 Practicum III/1 cr. hr./3 periods (lab)

The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 4 Practicum IV/1 cr. hr./3 periods (lab)

The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

✓ **PED 5 Field Work I/1 cr. hr./1 period/1 lec.**

Provides a cooperative educational experience involving students working with federal, state, county, municipal and private agencies under supervision.

✓ **PED 120 Facilities for Physical Education and Recreation/2 cr. hrs./2 periods/2 lec.**

A survey of available facilities in Pima County. Students learn about size, space, site planning, design, construction materials and techniques, costs, competitive bids and other facility problems. Field trips are a large part of this course.

✓ **PED 125 Foundations of Athletic Training/2 cr. hrs./2 periods/2 lec.**

This course consists of practical work in the training room as well as instruction in the techniques of athletic training. Students experience hydrotherapy, electrotherapy, taping, and various preventive and corrective methods used in sports and medicine.

✓ **PED 130 Elementary School Physical Education/3 cr. hrs./3 periods/3 lec.**

This is a skills/methods course providing the teacher with the basic skills and knowledge of materials and methods of teaching games, relays and modified activities in team and individual sports. Students also are introduced to the theoretical basis of using the movement education approach in teaching physical education in the elementary schools.

✓ **PED 131-138 Professional Activities/1-8 cr. hrs./2-16 periods (1-8 lec., 1-8 lab)**

A series of eight activities offered on a two-year rotational basis designed for physical education majors and minors. Two units of one credit each are taught each semester. These are skill oriented classes with emphasis on skill and strategy development beyond beginning/intermediate level.

✓ **PED 131 Softball/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 132 Basketball/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 133 Tennis/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 134 Wrestling/Self Defense/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 135 Soccer/Field Hockey/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 136 Volleyball/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 137 Swimming/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 138 Badminton/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 139 Introduction to Leisure Education/3 cr. hrs./3 periods**

For prospective professionals in the fields of health, physical education and recreation—a survey of opportunities and qualifications as well as a general orientation of these fields.

✓ **PED 140 Track & Field/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 144 Dance/2 cr. hrs./2 periods/2 lec.**

Introduction to folk, square, modern and social dances for majors and minors.

✓ **PED 145 Sports Officiating/2 cr. hrs./2 periods/2 lec.**

Students are acquainted with the rules of various sports from the standpoint of an official. Current methods and materials are included to develop competency in executing official rules. Actual experience is required, by service, in the intramural program and other agencies. (Same as REC 145.)

✓ **PED 147 Intramural Sports and Equipment/2 cr. hrs./2 periods/2 lec.**

A study of intramural organization and administration with practical experience in the Pima Community College intramural program. Students also are exposed to equipment purchasing procedures, inventory procedures, maintenance procedures and repair techniques.

✓ **PED 149 History of Physical Education/2 cr. hrs./2 periods/2 lec.**

A historical look at the social, political, religious and cultural influences as they shaped the physical activities of man from prehistoric times to the present. Emphasis also is on the leaders of physical education in each major period of time.

✓ **PED 150 Beginning Archery/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 152 Badminton/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 156 Basketball/1 cr. hr./2 periods (1 lec., 1 lab)**

✓ **PED 158 Folklore Dances/1 cr. hr./2 periods (1 lec., 1 lab)**

Taught are best known traditional folk dances from various regions of Mexico. The class begins with warm-up exercises followed by techniques of the zapateado. Progress is according to class ability. When necessary, classes in modern dance techniques are given as a compliment to the folklore. (May be repeated 3 times.)

PED 158 Bailes Folkloricos/1 cr. hr./2 periods (1 lec., 1 lab)

Se enseñarán los más celebrados bailes tradicionales de diversas regiones de México. El desarrollo de las clases será desde ejercicios de calentamiento hasta la técnica del zapateado, progresivamente, según las aptitudes de los elementos; y como complemento del folklore, tendrán clases de técnica de danza moderna cuando sea necesario para que los elementos tengan mayor proyección hacia el público.
(Se permite repetir tres veces.)

- ✓ **PED 159 Beginning Dance/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 160 Baseball/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 162 Bowling/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 164 Defensive Tactics/2 cr. hrs./3 periods (2 lec., 1 lab)**
- ✓ **PED 165 Deportes Bilingües/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 166 Beginning Fencing/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 168 Field Hockey/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 169 Flag Football/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 170 Beginning Golf/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 171 Gymnastics/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 172 Handball/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 173 Racquetball/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 174 Ice Hockey/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 175 Ice Skating/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 176 Beginning Judo/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 177 Physical Fitness/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 178 Scuba/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 179 Self-Defense for Women/2 cr. hrs./3 periods (2 lec., 1 lab)**
- ✓ **PED 180 Soccer/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 181 Softball/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 182 Square Dancing/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 183 Swimming/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 184 Life Saving/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 185 Water Safety Instructor/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 186 Beginning Tennis/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 187 Volleyball/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 188 Weight Training/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 189 Wrestling/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 190 Track & Field/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 200 Independent Activity/1 cr. hr./2 periods (1 lec., 1 lab)**

Independent activity in physical education under the supervision of an instructor.

- ✓ **PED 250 Advanced Archery/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 256 Dance, Arabic/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 259 Advanced Dancing/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 266 Advanced Fencing/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 270 Advanced Golf/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 271 Advanced Gymnastics/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 276 Advanced Judo/1 cr. hr./2 periods (1 lec., 1 lab)**
- ✓ **PED 285 Intermediate Tennis/1 cr. hr./2 periods (1 lec., 1 lab)**

Course is designed for students who have already completed PED 186, Beginning Tennis. Emphasis on refinement of basic tennis skills at an intermediate level. Running forehand drive, running backhand drive, volley placement, spin service, perfecting return of service, physical and mental stress, analysis of opponent's game will be introduced at this level.

- ✓ **PED 286 Advanced Tennis/1 cr. hr./2 periods (1 lec., 1 lab)**

PHYSICS

PHY 101 Technical Physics I/3 cr. hrs./4 periods (2 lec., 2 lab)

Designed for the technologist, the course is based on the specific applications of physics to the automotive, air conditioning and other technical fields. All math needed is developed concurrently.

PHY 102 Technical Physics II/3 cr. hrs./4 periods (2 lec., 2 lab)

☐ Prerequisite: PHY 101, MTH 70.

A continuation of PHY 101. The course deals mostly with the application of the electro-magnetic theory to the technologies.

PHY 105 Fundamental Physics/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: High school algebra.

Intended for health careers, this course offers a brief introduction to the phenomena occurring in the physical world. Units or topics are chosen according to special interests of students.

PHY 112 General Physics for Education Majors/3 cr. hrs./5 periods (2 lec., 3 lab)

☐ Prerequisite: High school algebra.

For education majors. A one-semester course offering an introduction to the subject matter of general physics, mechanics, heat, light, sound, electricity, magnetism and modern physics.

PHY 121 Introductory Physics I/4 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: High school algebra.

Topics include mechanics, heat, waves and sound. A non-calculus, liberal arts course.

PHY 122 Introductory Physics II/4 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 121.

Light, electricity and magnetism, atomic and nuclear physics.

PHY 131 Introductory Physics with Calculus I/4 cr. hrs./7 periods/ (4 lec., 3 lab)

☐ Prerequisite: Calculus or concurrent.

For mathematics and science majors. Topics include mechanics, heat, waves and sound.

PHY 132 Introductory Physics with Calculus II/4 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 131.

Light, electricity and magnetism, atomic and nuclear physics.

PHY 170 Practical Applied Physics/1-3 cr. hrs./1-3 periods

☐ Prerequisite: Certain topics may have a prerequisite.

Topics available include how things work, physics of musical instruments, science and society, holography, energy and independent study.

PHY 210 Introductory Mechanics/4 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: Calculus and analytic geometry.

An introduction to mechanics. Recommended for physics and engineering majors. Kinematics, dynamics, energy, momentum, and harmonic motion.

PHY 216 Introductory Electricity and Magnetism/4 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 210.

Electricity and magnetism through Maxwell's equations. For physics and engineering majors.

PHY 221 Introduction to Waves and Heat/3 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: PHY 210.

Heat, fluids, sound and light, including optics and optical instruments.

PHY 230 Introduction to Modern Physics/3 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: PHY 210 and 216 or PHY 131 and 132, MTH 180, 185.

Atomic and nuclear physics, relatively and radioactivity, quantum physics.

POLITICAL SCIENCE

POL 50 Immigration Law and Practices/3 cr. hrs./3 periods/3 lec.

The legal and political status of immigrants from Mexico, the process of immigration and counseling for the immigrant.

POL 50 Derecho, Conceptos y Procesos de Emigración/3 cr. hrs./3 periods/3 lec.

Se estudiará el derecho de inmigración a los Estados Unidos, sus procesos y ramificaciones legales.

POL 100 Introduction to Political Science/3 cr. hrs./3 periods/3 lec.

Politics. What is it? What is its significance in daily life? How do political systems change?

POL 110 American National Government and Politics/3 cr. hrs./3 periods/3 lec.

A survey of the institutions of American government and the evolution of our political system. Included are studies of the Constitution, roles of political parties, interest groups, public opinion and voting behavior. Special attention is given to positions of economic, ethnic and religious minorities in American society.

**POL 111 American State and Local Governments and Politics
3 cr. hrs./3 periods/3 lec.**

Survey of state and local governments and politics with particular emphasis on the political culture of Arizona, the state's politically relevant economic and ethnic groups, and its current political trends.

POL 112 National and State Constitutions/3 cr. hrs./3 periods/3 lec.

Historical background, organization and functions of the national, state and local governments based on the constitutions of the United States and Arizona. Satisfies the requirements for teacher certification.

POL 120 Introduction to Comparative Politics/3 cr. hrs./3 periods/3 lec.

An examination of the basic concepts and methods of comparative political analysis and their application to the political systems of Western Europe, the Soviet Union, Eastern Europe, and the developing areas.

POL 130 Introduction to International Relations/3 cr. hrs./3 periods/3 lec.

A general examination of international relations including the elements of national power; the economic, social and psychological determinants of international political behavior; formation of foreign policy; international law; and international and regional organizations.

POL 140 Minority Groups and the Political Process/3 cr. hrs./3 periods/3 lec.

An investigation of the position of various minority groups in the American political system, including their general political attitudes and voting behavior, patterns of political organization, party activity, and their role in the formation of public policy.

POL 149 Independent Study in Political Science/2-4 cr. hrs./2-4 periods

Independent readings or special projects to be arranged with the instructor.

POL 190 Political Revolution and Violence/3 cr. hrs./3 periods/3 lec.

An examination of the causes of political revolution and violence using historical, psychological and sociological data to explain how violent changes in political power come about.

POL 250 Political Science Internship/3 cr. hrs./3 periods/3 lec.

This internship with the City of Tucson or other local governmental unit is designed to give the student practical experience in government. To qualify students should have completed 6 credits of political science and Writing 101.

PROFESSIONAL DEVELOPMENT

PRD 50 The Arizona Community College/3 cr. hrs./3 periods/3 lec.

An exploration of the philosophy, goals, legislation, curriculum, board and administration functions, grantsmanship, student personnel services and continuing education function of the Arizona community college.

PSYCHOLOGY

PSY 50 The Psychology of Death and Loss/3 cr. hrs./3 periods/3 lec.

Course emphasizes adjustment to death and loss. Current social and attitudinal considerations are reviewed.

PSY 100 Introduction to Psychology I/3 cr. hrs./3 periods/3 lec.

Survey of psychology; growth of the individual, behavior disorders, introduction to social psychology, learning and history of the field.

PSY 100 Introducción a Psicología I/3 cr. hrs./3 periods/3 lec.

Estudio panorámico de la psicología; desarrollo del individuo, aberración de comportamiento, introducción a la psicología social, el proceso bajo el cual se aprende, y la historia del campo de la psicología.

PSY 101 Introduction to Psychology II/3 cr. hrs./3 periods/3 lec.

Biological bases of behavior, sensation and perception, motivation, emotion and stress.

PSY 102 Introduction to Social Psychology/3 cr. hrs./3 periods/3 lec.

The basic theories and concepts of social psychology and the individual's experience in group situations.

PSY 103 Normal Personality I/3 cr. hrs./3 periods/3 lec.

Psychological functioning and coping behaviors for normal personality development. Early adulthood is stressed.

PSY 104 Introduction to Behavior Modification/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: PSY 100 or equivalent.

An introduction to the principles of behavior modification with emphasis on application in practical situations.

PSY 115 Human Sexuality/3 cr. hrs./3 periods/3 lec.

The human sexual experience throughout the life cycle viewed from sociological and psychological perspectives. (Same as SOC 115.)

PSY 203 Normal Personality II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: PSY 103 or consent of instructor.

Further study of normal personality through participation in groups. Bioenergetics and Gestalt are among the group approaches available. For information regarding specific semester offerings, consult the behavioral or social sciences area.

PSY 205 Introduction to Testing and Assessment/3 cr. hrs./3 periods/3 lec.

A survey course of standardized and teacher made tests and assessment instruments; how to interpret the results; what they reveal and don't reveal; and the principal users.

PSY 240 Futures: A Psychological Perspective/3 cr. hrs./3 periods/3 lec.

An introduction to the rapidly expanding discipline of futurism. Why think about the future? How to think about the future? What to do about the future? Careers in futurism? Lectures, readings, class discussions and simulations of the future.

PSY 296 Individual Studies in Psychology/3-6 cr. hrs./3-6 periods

☐ Prerequisite: Consent of instructor.

An exploration of special interest areas. Content to be determined by student and facilitator/instructor.

PSY 298 Social Psychology Practicum/1-6 cr. hrs./3-18 periods (lab)

☐ Prerequisite: Consent of instructor.

Students become familiar with some specific areas of social psychology through a review of pertinent research, directed observation, and personal participation in relevant experimental or natural settings.

PUBLIC ADMINISTRATION

PAD 60 Time Management/1 cr. hr./1 period/1 lec.

Techniques and procedures to effectively manage time are discussed. Discussion sessions identify time wasters.

PAD 105 Introduction to Public Administration/3 cr. hrs./3 periods/3 lec.

Public and private approaches to leading social issues, and the role of the public administrator in their resolution.

**PAD 215 Environmental Factors in the Administrative Process
3 cr. hrs./3 periods/3 lec.**

An exploration of the environmental influences and constraints which the administrator encounters in the course of policy execution.

PUBLIC BUILDING MAINTENANCE

PBM 55 Building Maintenance/2 cr. hrs./2 periods/2 lec.

All phases of the care and cleaning of buildings, fixtures and furnishings including various types of building interiors.

RADIOLOGIC (X-RAY) TECHNOLOGY

RAD 71 Radiologic Fundamentals/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.

An introduction to radiologic technology as a profession and its application in the allied health professions. Included are the role and responsibilities of radiologic technologists, the theoretical knowledge and practice necessary for competence in the accurate utilization of X-ray and processing equipment for diagnosis.

✓ **RAD 72 Radiographic Processing and Technique/4 cr. hrs./6 periods (3 lec., 3 lab)**

☐ Prerequisite: RAD 71 and consent of program coordinator.

Emphasizes the technical factors and processing techniques utilized in the formation of the diagnostic X-ray image. Included are the factors affecting and controlling radiographic quality, film characteristics, and manual/automatic processing.

✓ **RAD 73 Radiographic Positioning I/4 cr. hrs./6 periods (3 lec., 3 lab)**

☐ Prerequisite: RAD 71 and consent of program coordinator.

Demonstration and practice of routine and special radiographic positioning for visualization of the bones of the skeleton, exclusive of those of the skull, and the viscera of the chest and abdomen. Phantoms are used to relate the principles of radiographic techniques and anatomical positioning.

✓ **RAD 81 Radiographic Positioning II/5 cr. hrs./7 periods (4 lec., 3 lab)**

☐ Prerequisite: Satisfactory completion of required first-year courses.

Students learn the radiographic positions required to demonstrate the bones of the skull and the visceral organs. Class discussions include fluoroscopic procedures, mobile radiography, the use of contrast media and patient care.

✓ **RAD 82 Radiologic Physics I/5 cr. hrs./7 periods (4 lec., 3 lab)**

☐ Prerequisite: Satisfactory completion of required first-year courses.

Students learn the function of X-ray machines, the electronic components of the X-ray circuit and special accessory equipment required to produce diagnostic radiographs. Emphasis is on accurate radiographic principles and technical factors, the demonstration and application of X-ray equipment, and the methods of protecting the patient and personnel from ionizing radiation.

✓ **RAD 83 Clinical Procedures I/2 cr. hrs./6 periods (lab)**

☐ Prerequisite: Satisfactory completion of required first-year courses.

Students apply their acquired skills of routine radiographic procedures and related studies in clinical situations under the direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals. Please note that students must register for two lab sections for a total of six lab hours per week in the affiliated hospital assigned to them.

✓ **RAD 84 Radiation Biology, Nuclear Medicine and Therapy/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: Satisfactory completion of required first-year courses.

An introduction to radiation biology and specialties of nuclear medicine and radiation therapy which utilize ionizing radiation for the diagnosis and treatment of benign and malignant diseases. Emphasis is on the biologic effects of radiation on human tissues and the equipment and technology utilized in nuclear medicine and radiation therapy.

✓ **RAD 85 Radiographic Positioning III/5 cr. hrs./7 periods (4 lec., 3 lab)**

☐ Prerequisite: Satisfactory completion of required third-semester courses.

Demonstration and practice of special radiographic procedures of the vascular anatomy, special contrast media studies, pediatric radiography, nursing and surgical procedures.

✓ **RAD 86 Clinical Procedures II/2 cr. hrs./6 periods (lab)**

☐ Prerequisite: Satisfactory completion of required third-semester courses.

A continuation of RAD 83. Students apply advanced skills in emergency and specialized radiology procedures in clinical situations under direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals. Please note that students must register for two lab sections for a total of six lab hours per week in an affiliated hospital assigned to them.

✓ **RAD 88 Radiologic Physics II/5 cr. hrs./7 periods (4 lec., 3 lab)**

☐ Prerequisite: Satisfactory completion of required third-semester courses.

A continuation of RAD 82 with special emphasis on the equipment utilized in mobile radiography, body-section radiography, special procedures, ultrasound, xeroradiography, thermography and image intensification.

✓ **RAD 91 Hospital Externship Practicum I/12 cr. hrs./40 periods (lab)**

☐ Prerequisite: Satisfactory completion of the first four semesters of program and consent of coordinator.

All students must spend an appropriate time as an extern in an affiliated approved hospital radiology department to obtain additional practical training. Such approved radiology departments must be under the direct supervision of a radiologic technologist registered by the American Registry of Radiologic Technologists and a radiologist.

RAD 92 Hospital Externship Practicum II/12 cr. hrs./40 periods (lab)

- ☐ Prerequisite: RAD 91.
A continuation of RAD 91.

RAD 93 Hospital Externship Practicum III/12 cr. hrs./40 periods (lab)

- ☐ Prerequisite: RAD 92.
A continuation of RAD 92.

RAD 100A Radiographic Tomography/1 cr. hr./1 period/1 lec.

- ☐ Prerequisite: Technologists who are certified by the American Registry of Radiologic Technologists (ARRT) and technologists who are eligible to take the registry examination (ARRT). Instructor's permission required.

This course is designed to renew and improve the radiologic technologist's knowledge of the principles of tomography and its applications. The course includes historical context of tomography, factors affecting tomographic images, testing the system, applications and special techniques. The course will enhance the radiologic technologist's ability to perform all types of tomographic examinations.

RAD 100B Radiographic Tubes/1 cr. hr./1 period/1 lec.

- ☐ Prerequisite: Technologists who are certified by the American Registry of Radiologic Technologists (ARRT) and technologists who are eligible to take the registry examination (ARRT). Instructor's permission required.

This course is designed to update the knowledge of the radiologic technologist on the selection and utilization of the x-ray tube. The course covers the following modules: historic development and tube selection, tube failure, tube rating charts, tube conservation and special applications, and tube components and function.

RAD 100C Quality Assurance in Radiography/1 cr. hr./1 period/1 lec.

- ☐ Prerequisite: Technologists who are certified by the American Registry of Radiologic Technologists (ARRT) and technologists who are eligible to take the registry examination (ARRT). Instructor's permission required.

This course will cover the principles of quality control in diagnostic radiography. The course covers the following modules: film processor quality control, radiographic equipment, peripheral systems, test tools and accessory equipment, and safety items.

RAD 105 Skull Refresher/2 cr. hrs./2 periods/2 lec.

- ☐ Prerequisite: Registered or registry eligible (A.R.R.T.).

This course is for registered or registry eligible radiologic technologists to review and practice radiographic-positioning for visualization of the bones of the skull, sinuses and mastoids. Radiographic phantoms are used to demonstrate the principles of exposure. Group process is used to demonstrate positioning and to critique films.

READING

REA 52 Bilingual Reading/3 cr. hrs./3 periods/3 lec.

- ☐ Prerequisite: Some reading ability in English and Spanish.
Laboratory methods and techniques are used to improve reading in English and Spanish. There are side-by-side readings in English and Spanish, independent readings and vocabulary development in both.

REA 52 Lectura Bilingües/3 cr. hrs./3 periods/3 lec.

Para estudiantes que desean mejorar su habilidad en el uso del español, o los dos idiomas. Escritos originales en español coincidirán con su traducción en inglés; escritos en inglés, coincidirán con su traducción en español. Finalmente, escritos en inglés, todavía no traducidos, serán comparados con escritos en español del mismo tema. El laboratorio permitirá trabajos individuales además de en grupo.

REA 68 Techniques of Vocabulary/1 cr. hr./1 period/1 lec.

Students learn how to improve their vocabulary through a variety of methods such as use of structural analysis and/or context clues. An increased understanding of word roots and derivatives will enable students to easily expand their existing vocabularies and to use newly acquired words correctly and with confidence.

REA 71 Spelling/1 cr. hr./1 period/1 lec.

Spelling skills are improved through concentration on principles of spelling.

REA 73 Understanding What You Read/2 cr. hrs./2 periods/2 lec.

Designed to help students read printed materials with understanding. Various levels of understanding are explained and applied to diverse reading materials with emphasis placed on following directions, recognizing supporting details and recognizing sequence.

REA 77 Study Skills/2 cr. hrs./2 periods/2 lec.

How to study and how to listen.

REA 78 Test-Taking Techniques/1 cr. hr./1 period/1 lec.

Improving study methods through test-taking techniques.

REA 100 Reading/4 cr. hrs./4 periods

All students should register for REA 100. Course placement for each student is determined by diagnostic testing and teacher evaluation after enrollment. Day classes meet for four hours a week but special schedules can be arranged for students who would otherwise have a class conflict. Afternoon and evening classes meet two hours twice a week. Non-native speakers of English should see English as a Second Language. Group and individual instruction is emphasized in vocabulary, comprehension, study skills and reading speed in each of the six courses which are:

REA 100—Reading Fundamentals

REA 101—Reading Improvement

REA 110—Reading Techniques

REA 111—Developmental Reading I

REA 112—Developmental Reading II

REA 120—Critical Reading

Reading courses are not necessarily consecutive. Students may register for Reading 100 up to four times for full credit.

REAL ESTATE

RLS 101 Real Estate Principles/3 cr. hrs./3 periods/3 lec.

An introduction to real estate, providing familiarity with real estate and associated rules and regulations. The Arizona Department of Real Estate accepts this course as satisfying the pre-licensing educational requirement.

RLS 102 Real Estate Practices/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: RLS 101 or Arizona Real Estate Salesman's License.

Real estate as it affects individuals and business firms; and the involvement of government in urban redevelopment and urban planning. Topics include property rights, ownership, financing, brokerage and evaluation.

RLS 120 Real Estate Escrow Principles/3 cr. hrs./3 periods/3 lec.

An overview of the concept of real estate escrow and the fundamental principles involved in real estate escrow activities. Included are opening, processing, and closing escrow accounts.

RLS 121 Real Estate Escrow Practices/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: RLS 120 or equivalent.

In-depth study of unusual and difficult types of escrow and their possible solutions with strong emphasis in real estate transactions. Designed for persons currently performing escrow duties.

RLS 201 Real Estate Law/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: RLS 101 or consent of instructor.

This course provides real estate students with the basic concepts and application of the general principles of real estate law. Legal topics include freehold estates, landlord and tenant, concurrent ownership, easements, profits, license, deeds and conveyances, and recording.

RLS 202 Real Estate Appraisals/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: RLS 101 or consent of instructor.

Real estate students are acquainted with the basic principles and practical application of real estate appraisals. Topics include valuation terms, market, analysis and classification of data, income and cost factors.

RLS 210 Real Estate Escrow Problems/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: RLS 121.

An advanced course in real estate escrow, principles, practices, and problems emphasizing the adverse consequences of failure to understand and apply the essentials of sound escrow concepts.

RECREATION

✓ REC 51 Arts and Crafts/3 cr. hrs./3 periods/3 lec.

Focuses on the practical experience in creative craft projects. Included are ceramics, metal, weaving, woodworking and junk art.

✓ REC 52 Recreation Systems and Management/3 cr. hrs./3 periods/3 lec.

An introduction to national, state, county, city and private parks and the recreational systems offered in each.

✓ REC 59 Park Administration/3 cr. hrs./3 periods/3 lec.

The administrative procedures and techniques of various park systems.

✓ REC 74 Public Relations and Communigraphics/3 cr. hrs./3 periods/3 lec.

The development of flyers, brochures and pamphlets; problems of dealing with the public and providing information on the agency's functions and activities.

✓ REC 75 Water Recreation and Resources/3 cr. hrs./3 periods/3 lec.

Practices in managing outdoor water-oriented recreation on private and public lands.

✓ REC 76 Federal Lands and Management/1 cr. hr./1 period

Students are acquainted with the historical development of federal resources protection agencies and the implementation of policy.

✓ REC 77 Federal Lands and Urbanization/1 cr. hr./1 period

Students are provided with some insight into potential problems concerning utilization of federal lands near major population centers.

✓ REC 78 Federal Lands and Fire Control Policy/2 cr. hrs./2 periods

This course covers the use of tools, safety gear, communication equipment, and techniques in the control of fires on federal land.

✓ REC 79 Federal Lands Facility Planning and Visitor Services 1 cr. hr./3 periods (2 lec., 1 lab)

This is a sequential four-day session during the spring recess at which time the student is introduced to materials in park operations, communications, environmental interpretation, and search and rescue techniques as they apply to federal lands.

✓ REC 101 Introduction to Parks and Recreation/3 cr. hrs./3 periods/3 lec.

General surveys of the development and role of parks, their current roles and functions in modern society; a survey of recreation, including theories of leisure, changing recreation use and activities due to changes in time, income and mobility factors; and models of general recreation experiences.

✓ REC 102 Group Leadership/2 cr. hrs./2 periods/2 lec.

Course provides a knowledge of human leisure, dynamics, leadership ability and principles of effective leadership. Students experience these characteristics by observation, demonstration, participation and field trips.

✓ REC 103 Recreation Administration and Finance/3 cr. hrs./3 periods/3 lec.

Covered are administration, financing and responsibility for parks and recreational areas, personnel selection, public relations, use of community resources and legal aspects of recreation administration.

✓ REC 114 Program Planning and Organization/3 cr. hrs./3 periods/3 lec.

The essential elements and basic principles of organization, supervision, promotion and evaluation of various types of recreation programs and services.

✓ REC 115 Outdoor Recreation-Education/3 cr. hrs./3 periods/3 lec.

An overview of the scope and magnitude of outdoor recreation, including history and development, conservation and organized camping. Camp craft skills are taught during field trips.

✓ REC 116 Recreation for Special Groups/3 cr. hrs./3 periods/3 lec.

Students are introduced to various recreation program for special groups. Special consideration is given to organizing and planning recreational activities for the handicapped, aged and corrective programs.

✓ REC 118 Survival/2 cr. hrs./4 periods (1 lec., 3 lab)

The principles and techniques of survival. Students have an opportunity to enhance their ability to survive with the environment.

✓ REC 119 Recreational Games/2 cr. hrs./2 periods/2 lec.

Students gain an understanding of teaching children's games, both team and individual, in a recreational setting. This course is primarily for the recreation leader.

REC 121 First Aid/2 cr. hrs./2 periods/2 lec.

First aid and emergency care procedures to include: life-saver steps, drug overdoses, splints, bandages, and heat and cold related injuries. The American Red Cross Standard First Aid certificate may be awarded to qualified students.

REC 145 Sports Officiating/2 cr. hrs./2 periods/2 lec.

Students are acquainted with the rules of various sports from the standpoint of an official. Current methods and materials are included to develop competency in executing official rules. Actual experience is required, by service, in the intramural program and other agencies. (Same as PED 145.)

REC 150 Camping and Hiking/1 cr. hr./2 periods (1 lec., 1 lab)

A recreational activity offering students a lecture/lab experience in camping and hiking. Several field trips give students an exposure to camp cooking, camp selection and backpacking.

REC 152 Beginning Marksmanship/1 cr. hr./2 periods (1 lec., 1 lab)

A lecture/lab course introducing students to firearms. Moral and legal aspects of firearms are emphasized along with firearms safety. Course includes range practice. (Same as AJS 152.)

REC 154 Mountaineering/1 cr. hr./2 periods (1 lec., 1 lab)

Technical and free-climbing techniques are explained. Students learn techniques on campus and then are taken on several field trips to practice the techniques.

REC 156 Beginning Trapshooting/1 cr. hr./2 periods (1 lec., 1 lab)

The history of shotguns, principles and techniques of instinct shooting, and the rules of trap and skeet shooting. Course is conducted on the range and includes extensive practice.

REC 160 Recreational Map Use/1 cr. hr./2 periods (1 lec., 1 lab)

The basics of scale (distance), direction, elevation and location. Students learn practical aspects of route selection and compass use.

REC 252 Advanced Marksmanship/1 cr. hr./2 periods (1 lec., 1 lab)

Course covers advanced techniques of competitive marksmanship and includes extensive range practice while emphasizing range safety.

REC 256 Advanced Trapshooting/1 cr. hr./2 periods (1 lec., 1 lab)

Similar to REC 252.

REC 296 Cooperative Recreation Training/6 cr. hrs./41 periods (1 lec., 40 lab)

A supervised cooperative work program for students in occupational programs for a minimum of 40 hours work per week. Cooperative Education may be taken for a maximum of 12 credit hours over two or more semesters. Course objectives differ each semester.

REC 297 Cooperative Recreation Training/6 cr. hrs./41 periods (1 lec., 40 lab)

A supervised cooperative work program for students in occupational programs for a minimum of 40 hours work per week. Cooperative Education may be taken for a maximum of 12 credit hours over two or more semesters. Course objectives differ each semester.

REC 299 Cooperative Recreation Training/3 cr. hrs./16 periods (1 lec., 15 lab)

A supervised cooperative work program for students in a recreation occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

RELIGION, COMPARATIVE

REL 120 Old Testament/3 cr. hrs./3 periods/3 lec.

The major works of the Old Testament are studied with emphasis given to their religious, moral, historical and literary significance.

REL 121 New Testament/3 cr. hrs./3 periods/3 lec.

The major works of the New Testament are studied with emphasis given to their religious, moral, historical and literary significance.

REL 125 Islam/3 cr. hrs./3 periods/3 lec.

The history and literature of Islam are explored from the Prophet Mohammed to the present. Special emphasis is on the poetry and practices of the Sufis.

REL 130 Comparative Religions: Oriental/3 cr. hrs./3 periods/3 lec.

Hinduism, Buddhism, Zoroastrianism, Confucianism, Taoism, Shintoism and Zen Buddhism are explored through readings, discussions and movies. Christianity is compared through student knowledge and opinion in discussions.

REL 140 Philosophy of Religion/3 cr. hrs./3 periods/3 lec.

An introduction to the philosophical study of religion. (Same as PHI 140.)

RESPIRATORY THERAPY

RTH 71 Introduction to Respiratory Therapy/5 cr. hrs./9 periods (3 lec., 6 lab)

☐ Prerequisite: Admission to the RTH core curriculum, concurrent enrollment in RTH 82. A brief history of respiratory therapy, handling of medical gases, safety practices, basic nursing arts for the therapist, and general equipment used in the administration of medical gases.

RTH 73 Clinical Medicine/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: RTH 71, concurrent enrollment in RTH 83, 86 and 91. Course emphasizes the study of microorganisms and control of pathogens related to cardiopulmonary disorders, and the basics of pharmacology and medications used in respiratory therapy.

RTH 82 Respiratory Physiology/5 cr. hrs./5 periods/5 lec.

☐ Prerequisite: Concurrent enrollment in RTH 71. An in-depth study of the cardiopulmonary system, associated structures and the principles involved in ventilation and gas transport.

RTH 83 Respiratory Care I/5 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: RTH 71, concurrent enrollment in RTH 73, 86 and 91. Students are introduced to the study of humidity/aerosol therapy and all of the clinical indications for such therapy. Also covered are methods and principles of cardiopulmonary resuscitation and monitoring of the critically ill patient.

RTH 84 Respiratory Care II/5 cr. hrs./7 periods (4 lec., 3 lab)

☐ Prerequisite: RTH 83, concurrent enrollment in RTH 89 and 92. Course covers the principles of all positive pressure breathing devices and clinical applications. Also studied are chest physiotherapy and rehabilitative respiratory therapy. Volume ventilators are explored with emphasis on proper selection of a ventilator and the assessment of a patient in need of assisted or controlled ventilation.

RTH 86 Diseases I/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: RTH 82, concurrent enrollment in RTH 73, 83 and 91. Course covers cardiopulmonary diagnostic procedures and studies, and begins the study of common pulmonary disorders.

RTH 89 Diseases II/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: RTH 86, concurrent enrollment in RTH 84 and 92. A continuation of the study of pathophysiology of cardiopulmonary disorders and treatment.

RTH 91 Clinical Procedures I/5 cr. hrs./15 periods (lab)

☐ Prerequisite: Concurrent enrollment in RTH 83. This course is the laboratory portion and clinical practicum of the program. Students begin application of clinical principles in a hospital setting after suitable laboratory experience.

RTH 92 Clinical Procedures II/8 cr. hrs./24 periods (lab)

☐ Prerequisite: Concurrent enrollment in RTH 84. An extension of RTH 91 with more in-depth clinical work and responsibility.

SAFETY EDUCATION

SED 50 Motorcycle Safety/1 cr. hr./1.7 period (.7 lec., 1 lab)

☐ Prerequisite: Automobile Driver's License. The course is designed through classroom instruction and practice to teach individuals motorcycle safety including controls, basic maneuvers, defensive riding, selection, and insurance.

SHEET METAL

SML 110 Sheet Metal I/4 cr. hrs./6 periods (3 lec., 3 lab)

Students learn to lay out and fabricate metal items for air conditioning fittings under proper instruction given on the use of hand and machine tools.

SML 120 Sheet Metal II/4 cr. hrs./6 periods (3 lec., 3 lab)

☐ Prerequisite: SML 110.

A continuation of layout and fabrication of fittings for air conditioning. Students learn to build and create these objects.

SML 130 Sheet Metal Pattern Layout I/3 cr. hrs./3 periods/3 lec.

Students learn all phases of laying out sheet metal work including pattern making, cutting, shop methods and procedures of development. This course is designed for all metal trades and follows a sequence of parallel lines, radial lines and triangulation.

SML 135 Sheet Metal Pattern Layout II/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SML 130.

A continuation of SML 130.

SML 210 Sheet Metal Pattern Layout III/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SML 135.

A continuation of SML 135.

SML 220 Architectural Sheet Metal/3 cr. hrs./4 periods (2 lec., 2 lab)

☐ Prerequisite: SML 120, 210.

Students are supervised in fabricating gutterwork, valleys, range hoods, flashing and ornamental work. They also are exposed to different designing problems in sheet metal.

SML 299 Cooperative Sheet Metal Training/3 cr. hrs./16 periods (1 lec., 15 lab)

A supervised cooperative work program for students in a sheet metal occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

SIGN LANGUAGE**SLG 100 The Community and the Exceptional Person/3 cr. hrs./3 periods/3 lec.**

This course is designed to expose students to community programs and agencies directly involved with the handicapped person. Field trips will offer discussions with educators, agency persons, handicapped members of the community and working interpreters.

SLG 101 Manual Communication I/4 cr. hrs./6 periods(3 lec., 3 lab)

A beginning course in the language of signs. Emphasis is on the development of transmissive skills in the use of the manual alphabet and numbers, plus increasing sign vocabulary. Lab session in the language lab. Each student will spend a minimum of three hours per week in the video tape lab working with assigned tapes.

SLG 102 Manual Communication II/4 cr. hrs./6 periods(3 lec., 3 lab)

Intermediate course in principles, methods and techniques of communicating manually with the deaf. Emphasis on the development of receptive skills in the use of the manual alphabet and numbers plus increasing sign vocabulary. Lab session in language lab. Each student will spend a minimum of three hours per week in the video tape lab working with assigned tapes.

SLG 120 History of Deafness/3 cr. hrs./3 periods/3 lec.

This course covers the treatment of deaf individuals and their education and legal status in western cultures from early civilizations to the present day, touching on political and philosophical stance supporting each.

SLG 150 Psycho-Social Aspects of Deafness/3 cr. hrs./3 periods/3 lec.

Provides an overview of deafness, different types of hearing losses, their effects on the functioning and status of the deaf individual (physical, educational, social.) Includes discussion of the multiple handicapped deaf individual.

SLG 180 Principles of Etiology and Audiology/3 cr. hrs./3 periods/3 lec.

This course offers a study of the normal ear and its function, normal audition and its measurement, and the most common causes of hearing loss and their effects on hearing. Hearing aids, their functions and limitations are discussed.

SLG 201 Manual Communications III/4 cr. hrs./6 periods(3 lec., 3 lab)

Advanced vocabulary, introduction to the grammar of American Sign Language. Includes body language, mime and other forms of nonverbal communication. Lab session in language lab. Each student will spend a minimum of three hours per week in the video tape lab working with assigned tapes.

SLG 202 Manual Communications IV/4 cr. hrs./6 periods(3 lec., 3 lab)

☐ Prerequisite: SLG 201.

Advanced course in American Sign Language stressing idioms and reading techniques. Lab session in language lab. Each student will spend a minimum of three hours per week in the video tape lab working with assigned tapes.

SLG 220 Interpreting I/3 cr. hrs./3 periods/3 lec.

Introduces the student to theories, principles, and special settings of interpreting. Covers ethics, definitions, and related topics of interpreting. Also covers oral interpreting for the deaf-blind. Role playing and simulated interpreting experiences will be included in the course.

SLG 250 Interpreting II/3 cr. hrs./3 periods/3 lec.

Concentrates on rapid verbatim interpreting similar to that found in classrooms, workshops and conference settings. Covers educational, platform, and religious interpreting and the professional ethics involved. Introduces legal and medical interpreting.

SLG 290 Practicum/6 cr. hrs./16 periods(1 lec., 15 lab)

The course is designed to provide practical interpreting skills in various settings and under varying conditions. Students may select the setting in which they wish to work after consultation with the proper advisor.

SOCIAL SERVICES**SSE 115 Drugs in American Society/3 cr. hrs./3 periods/3 lec.**

A general introduction to the current drug situation in the United States. Content includes philosophical exploration of the drug situation, interpretation within the social context, the physical and psychological effects of drugs, and a review of current drug programs and research. Emphasis is on dealing with stereotypes so that students can profit from additional information on the drug situation.

SSE 116 Introduction to Alcohol Abuse/3 cr. hrs./3 periods/3 lec.

An introductory course on past and present use and abuse of the drug alcohol including identification and treatment of the abuser and alcoholic. Consideration will be given to treatment alternatives and resources available to members of the abuser's and/or alcoholic's family.

SSE 127 Political and Legal Aspects of Drug Use/3 cr. hrs./3 periods/3 lec.

An overview of the political and legal aspects of drug use and abuse including historical perspectives on the drug situation, the influence of political pressures on the interpretation of the problem, the economics of drug abuse, civil liberties, court decisions and current thinking in the field.

SSE 133 Introduction to Social Welfare/3 cr. hrs./3 periods/3 lec.

An introduction to our social welfare system; what it is, has been, and what it may become nationally and locally. Also included is an in-depth review of community agencies and resources.

SSE 134 Casework Methods/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SSE 133.

The theory and practice of casework within the context of the Southwest. Also included are interviewing, case history and review, and how to develop a helping relationship. Case examples from various social service settings are examined.

SSE 216 Community Organization and Development/3 cr. hrs./3 periods/3 lec.

Course reviews the theory of organizing groups to effect change and the role of the professional organizer; provides an examination of institutions showing why they change or fail to change; and provides different strategies for effecting change. Students become involved, under guidance, in formal and informal groups within the Tucson community for observation purposes.

SSE 216 Organización y desarrollo de la comunidad/3 cr. hrs./3 periods/3 lec.

El curso repasa la teoría de la organización de grupos para crear cambio y el papel del organizador profesional; brinda una examinación de las instituciones enseñando por qué cambian o por qué no quieren cambiar; abarca las diferentes estrategias necesarias para un cambio efectivo. Los estudiantes participan, bajo supervisión, en grupos formales e informales en la comunidad tucsonense para poder observar.

SSE 217 Evaluation and Support of the Drug User/3 cr. hrs./3 periods/3 lec.

Course provides students with information and skills necessary to thoroughly and accurately evaluate an individual client including understanding the specific drug-related behaviors as well as other aspects of the social milieu surrounding the addict, such as family, legal and social situation. When combined with SSE 218, students can make an accurate matching of treatment modality to the needs of the client. This course should be taken jointly with SSE 218 or subsequent to SSE 218.

SSE 218 Treatment of the Drug Abuser/3 cr. hrs./3 periods/3 lec.

A comprehensive course leading to student skills in the treatment of the drug abuser. Content includes the various treatment modalities in use, including therapeutic communities, day-care programs, methadone maintenance and detoxification and psychotherapy models.

SSE 234 Interviewing Techniques—Social Services/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SSE 134.

Advanced techniques in interviewing, recording and evaluation. Students will participate in interviewing sessions and be evaluated as to their performance.

SSE 235 Group Work/3 cr. hrs./3 periods/3 lec.

An understanding of group dynamics including personal growth, leadership and organization development in different economic and cultural settings, the role of the leader in groups and techniques of working with groups. Case examples are examined and observed.

SSE 236 Crisis Intervention, Theory Techniques/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SSE 134.

The basics of crisis intervention in theory and practice. Students learn techniques of individual crisis intervention in effective personal crisis situations.

SSE 237 Group Technique Applications/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SSE 235.

Students further their experience in facilitating groups using the major group approaches discussed in SSE 235.

SSE 290 Social Services Field Experience/3 cr. hrs./15 periods(lab)

☐ Prerequisite: SSE 133, 134 and consent of instructor.

Supervised placement in community social services agencies so that students are exposed to and gain experience in the practical application of classroom knowledge. Bi-weekly seminars are conducted to discuss practical issues raised through the field experience and pertinent theory. Course may be taken two times for a maximum of six credit hours.

SSE 299 Cooperative Social Services Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a social service occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

SOCIOLOGY**SOC 52 Sociological Forces in Later Life/3 cr. hrs./3 periods/3 lec.**

The sociological problems faced by the elderly which includes the intellectual, cognitive, and behavioral aspects of the aging process. The social and transmatic concerns of the aged and retired.

SOC 100 Introduction to Sociology/3 cr. hrs./3 periods/3 lec.

What this society is, how we live in it and what we can do with it.

SOC 101 Current United States Social Problems/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SOC 100 for University of Arizona transfer.

How individuals get constructively involved.

SOC 103 Explorations in Prejudice/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SOC 100 for University of Arizona transfer.

Why we hate each other. What we, as participants in this course, do about our own prejudice and prejudice in the community.

SOC 105 World Population/3 cr. hrs./3 periods/3 lec.

Basic concepts of population studies; analysis of social trends, problems and solutions in relation to environmental factors with reference to both advanced and developing nations.

SOC 110 Introduction to Cities and Community Planning/3 cr. hrs./3 periods/3 lec.

An introductory course on the history, structure and form of cities to help students understand the urban environment and how the urban environment functions at the local level.

SOC 115 Human Sexuality/3 cr. hrs./3 periods/3 lec.

The human sexual experience throughout the life cycle viewed from sociological and psychological perspectives. (Same as PSY-115.)

SOC 127 Marriage and the Family/3 cr. hrs./3 periods/3 lec.

A study of the functions of the family and the effect of relationships within the family on the development of individuals in the home and community. (Same as HEC 127.)

SOC 166 Social Gerontology I/3 cr. hrs./3 periods/3 lec.

An introductory course to the bio-cultural study of aging, dying and death in a holistic manner. Emphasis is on the bio-social process of aging, factors in longevity and the social meaning of death.

SOC 167 Social Gerontology II/3 cr. hrs./3 periods/3 lec.

An introductory course to the bio-cultural study of aging, dying and death in a holistic manner. Emphasis is on the psycho-social foundation of aging, retirement crisis, socio-cultural factors, economics of aging and cross-cultural perspectives.

SOC 201 Ghetto Society/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SOC 100 for University of Arizona transfer.

A study of minority socialization and the life of urban disadvantaged groups.

SOC 202 Introduction to Civil Rights Practices/3 cr. hrs./3 periods/3 lec.

An explanation of legal practices and regulations with emphasis on individual rights and problems, the welfare system, financial contracting, health and building codes, and administrative processes in the schools. Applied field work included. (Included in POL 149.)

SOC 203 Sociology of Utopia/3 cr. hrs./3 periods/3 lec.

Included are the study of "alternative life styles" 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.

A study of the legal, social, economic, political, religious and psychological statuses of women in society.

SOC 289 Individual Studies in Sociology/3-6 cr. hrs./3-6 periods

☐ Prerequisite: Consent of instructor.

An exploration of special interest areas. Content to be determined by student and facilitator-instructor.

SOC 298 Topics in Community Involvement/1-3 cr. hrs./1-3 periods

☐ Prerequisite: Consent of instructor.

Direct, constructive student involvement in community problems. Students work individually or in small teams through guidance and periodic consultations with faculty advisors. Special activities also will be determined by the advisors. Students employed or working as volunteers with agencies or groups may get credit for those activities under this course.

SPANISH

SPA 50 Conversational Spanish I/4 cr. hrs./4 periods/4 lec.

Practice in speaking Spanish, emphasizing current usage and ease in expressing ideas. Emphasis also is on listening and speaking abilities. For beginners and non-native speakers only.

SPA 55 Conversational Spanish II/4 cr. hrs./4 periods/4 lec.

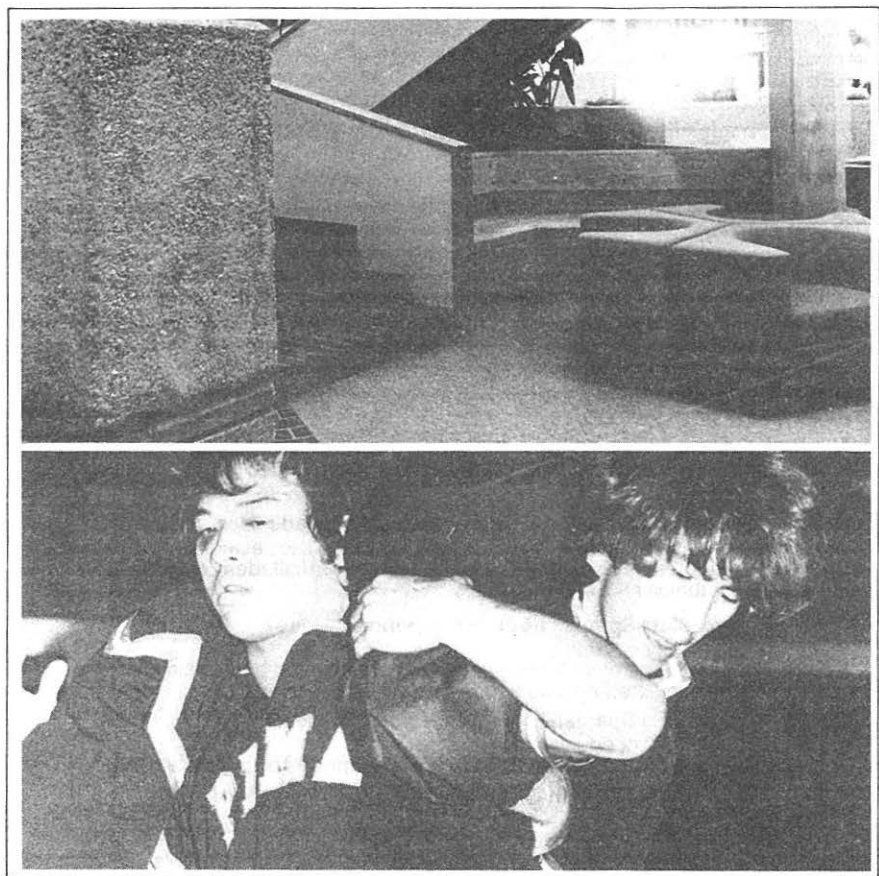
☐ Prerequisite: SPA 50 or 110 or knowledge of Spanish.

A continuation of SPA 50 with study on a more advanced level. Emphasis is on listening and speaking abilities. For non-native speakers only.

SPA 56 Advanced Conversational Spanish/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 55 or SPA 111.

Emphasis is on improving speaking skills of students interested in increasing their conversational abilities in Spanish on a more advanced level. Classes are conducted in Spanish.



SPA 70 Spanish for Medical Personnel/3 cr. hrs./3 periods/3 lec.

A conversational course for medical personnel to learn speaking and listening skills for daily medical situations. Covers basic rules for Spanish pronunciation, greetings, expressions of courtesy and medical terminology.

SPA 101 Spanish for Native Speakers I/4 cr. hrs./4 periods/4 lec.

Grammar instruction is designed to meet the particular needs of native speakers of Spanish; reading and writing in increasing difficulty to prepare for advanced composition and introductory courses in Spanish literature.

SPA 101 Español Para Estudiantes de Habla Hispana I/4 cr. hrs./4 periods/4 lec.

Es un curso planeado especialmente para responder a las necesidades del estudiante de habla hispana. Se empieza con el sistema básico, enseñar a leer y a escribir. Por efecto de conocimientos ya adquiridos previamente los estudiantes asimilan las enseñanzas con extraordinaria rapidez. Para leer se usan particularmente lecturas con fondo cultural mexicano.

SPA 102 Spanish for Native Speakers II/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 101.

This is a continuation of intensive Spanish for Native Speakers.

SPA 102 Español Para Estudiantes de Habla Hispana II/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 101.

En Español 102 se continúa el curso 101 del primer semestre con mayor participación en la literatura y en la gramática.

SPA 110 Elementary Spanish I/4 cr. hrs./4 periods/4 lec.

Basic communication skills are taught with emphasis on listening, speaking and reading abilities in elementary grammar. Students also are exposed to the culture and traditions of Spanish speaking countries.

SPA 111 Elementary Spanish II/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 110 or equivalent.

A continuation of Elementary Spanish I.

SPA 205-206 Imaginative Writing I, II/3-3 cr. hrs./3 periods/3 lec.

The course is designed to develop creative writing abilities in Spanish.

SPA 205-206 Literatura Creativa, I, II/3-3 cr. hrs./3 periods/3 lec.

Literatura creativa es un curso que ayudará técnicamente a los estudiantes que tengan vocación de escritores, propiciando el desarrollo de sus facultades creativas. Se tratará de publicar los trabajos más sobresalientes.

SPA 210 Intermediate Spanish I/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 111 or equivalent.

An intensive review of grammar fundamentals and a continued practice in speaking. Students also read selected authors and write short compositions.

SPA 211 Intermediate Spanish II/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 210 or equivalent.

This is a continuation of intermediate Spanish I with emphasis on practical usage.

**SPA 225 Intermediate Spanish Composition and Conversation I
3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: SPA 211 or equivalent.

This course gives students a firmer command of spoken and written Spanish. Includes preparation of themes and conversations from suggested topics and discussions of current issues and events.

SPA 225 Composición y Conversación en Español I/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: SPA 211 or equivalent.

El curso está diseñado para lograr mayor facilidad en el español hablado y escrito. Se prepararán discusiones sobre tópicos actuales de toda naturaleza para practicar el hablar y para ensanchar el vocabulario. Para la parte escrita se estudiarán trozos de cuento, para análisis de estilo y después para hacer imitaciones en ensayos.

**SPA 226 Intermediate Spanish Composition and Conversation II
3 cr. hrs./3 periods/3 lec.**

A continuation of intermediate Spanish Composition and Conversation I.

SPA 230 Introduction to Literature in Spanish/4 cr. hrs./4 periods/4 lec.

☐ Prerequisite: SPA 211, SPA 102, or a knowledge of spoken and written Spanish.

This course is designed to give students a broader knowledge of the language through the study of literature written in Spanish. Selections are taken from representative Spanish, Latin American and Chicano writers.

SPA 240 Independent Study in Spanish Language/1-4 cr. hrs./1-4 periods

☐ Prerequisite: Consent of instructor.

Students pursue an independent course of study under the supervision of an instructor.

SPA 249 Cultura Chicana/3 cr. hrs./3 periods/3 lec.

Este curso incluye los siguientes temas Chicanos; proceso histórico; el fenómeno social, creación literaria.

SPEECH

SPE 102 Introduction to Oral Communication/3 cr. hrs./3 periods/3 lec.

An introduction to the basic concepts and skills of oral communication in interpersonal and public address situations, and a study of communication barriers; research techniques, and norms of speech delivery.

SPE 105 Voice and Diction/2 cr. hrs./2 periods/2 lec.

Study and training in the aspects of basic voice production including speech and personality, the physiological system, and general speech standards.

SPE 110 Public Speaking/3 cr. hrs./3 periods/3 lec.

Study and training in public speaking with emphasis on audience adaptation. Reading and speech assignments focus on research, organization and logic, analysis and delivery as techniques of audience adaptation.

SPE 111 Parliamentary Procedures/2 cr. hrs./2 periods/2 lec.

Designed for student leaders and others interested in elementary parliamentary law and procedure. Rules and motions according to Robert's Rules of Order are explained together with modern changes and practices.

SPE 115 Voice and Articulation for the Stage/2 cr. hrs./2 periods/2 lec.

Study and training in the aspects of basic voice production as required by the stage; norms and techniques of stage diction, characterizations, dialects and sight-reading.

SPE 120 Business and Professional Communication/3 cr. hrs./3 periods/3 lec.

Study and training in communication situations and problems within the organizational complex. Basic assignments include oral reports, interviewing, problem-solving and conference groups, listening and persuasion.

SPE 124 Argumentation and Debate/3 cr. hrs./3 periods/3 lec.

A study and practice of argumentation. Students are acquainted with the basic forms of analysis, evidence, proof reasoning and refutation.

SPE 125 Forensics/1 cr. hr./1 period/1 lec.

Individualized instruction and practice in speech competition skills including debate, oral interpretation, and persuasive, extemporaneous and impromptu speaking. Each student must participate in at least one intercollegiate speech tournament.

SPE 130 Small Group Discussion/3 cr. hrs./3 periods/3 lec.

Study and training in group participation and leadership, the nature, use and function of group discussion, problem-solving groups, norms of group interaction and group relations.

SPE 136 Oral Interpretation of Literature/3 cr. hrs./3 periods/3 lec.

Study and training in the techniques of analysis and presentation of the oral dimensions of literature; use of voice and body in the presentation of literature, the role of interpreter, characterization, literary conventions and oral interpretation modes.

SPE 149 Independent Study in Speech/1-4 cr. hrs./1-4 periods

☐ Prerequisite: Six hours in speech or equivalent.

Students may research some aspect of communication not available through regular course offer such as non-verbal communication, communication theory, mass media, rhetorical criticism, etc.

SWAHILI

✓ SWA 50-51 Elementary Swahili, I, II/4-4 cr. hrs./4 periods/4 lec.

Basic patterns and structures of Swahili and sufficient vocabulary to communicate are taught through conversation, reading and writing. An advanced course in Swahili will be offered if enrollment is sufficient.

TECHNIQUES FOR TEACHER AIDES

✓ TTA 136 Techniques for Teacher Aides: Emotionally Handicapped 3 cr. hrs./3 periods/3 lec.

This course emphasizes the role of the teacher aide in working with the emotionally handicapped child and includes the use of psychological and educational behavioral checklists and evaluation methods.

✓ TTA 138 Techniques for Teacher Aides: Characteristics of Learning Disability I 3 cr. hrs./3 periods/3 lec.

This course is for teacher aides working with professional teachers of students with learning disabilities. Includes identification of learning disabilities and assistance to teachers through utilization of prescribed techniques and materials.

✓ TTA 140 Techniques for Teacher Aides: Mentally Handicapped Students 3 cr. hrs./3 periods/3 lec.

This course is for teacher aides working with professional teachers in training mentally handicapped students. Includes methods and procedures of assisting teachers in the education of mentally handicapped students utilizing prescribed techniques and materials.

TRAVEL AND TOURISM INDUSTRY

✓ TVL 101 Principles of Travel-Tourism Industry/3 cr. hrs./3 periods/3 lec.

Overview of the industry including modes, motives, effects of travel-tourism and examination of specific duties performed by a variety of specialists.

✓ TVL 102 Travel Agent Methods and Procedures/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: TVL 101 or concurrent registration.

Observation and task accomplishment of duties of a travel agent or specialist. Emphasis is on airline travel, tariffs, ticketing, manuals and routing.

✓ TVL 201 Travel-Tour Agency Management/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: TVL 102.

Business requirements in promotion, sales, financing and credit. Problems in schedule manipulation, resolving employee/customer conflict, and development of ethical relations with the traveling public are covered.

✓ TVL 202 Current Issues and Problems in Travel-Tourism/3 cr. hrs./3 periods/3 lec.

☐ Prerequisite: TVL 201 or concurrent registration.

Practice is provided in resolution of current problems within the travel-tourism business in economic, political, and legal areas.

WASTEWATER TECHNOLOGY

✓ WWT 101 Introduction to Water and Wastewater Technology 3 cr. hrs./5 periods(2 lec., 3 lab)

An introductory course covering the basic concepts of groundwater production and water distribution and wastewater collection and treatment. Wastewater emphasis is on ponds and package plants. Course is designed to include materials found in Grade I Certification requirements.

WWT 103 Small Treatment Plants/1 cr. hr./1 period/1 lec.

Course includes materials found in Grade I Certification on the operation and maintenance of wastewater lagoons including both stabilization ponds and aerated lagoons and portions of Grade II Certification requirements on the maintenance of extended aeration package plants. Activated sludge methods are stressed.

WWT 105 Quality Monitoring/1 cr. hr./1 period/1 lec.

Course includes materials found in Grades I, II, & III Certification requirements on flow measuring devices and sampling equipment and techniques including the use of tables and calculations. Also covered is the use of basic monitoring and operational tests.

WWT 107 Hydraulics of Water/2 cr. hrs./2 periods/2 lec.

☐ Prerequisite: MTH 110 or equivalent.

A practical course dealing with the hydraulics of water including flow measurements, pipe friction, pumps, flumes, detention times, velocity, valves, hydrostatics and sedimentation. Course is designed to include materials found in Grade I & II Certification requirements.

WWT 110 Sewerage System Maintenance/1 cr. hr./1 period/1 lec.

Course includes materials found in all grade level certification requirements of sewerage system maintenance. Includes the study of plant mechanical and electrical components, safety, collection, maintenance, conventional cleaning methods and inspection.

WWT 112 Chemical Control Processes/1 cr. hr./1 period/1 lec.

Course includes materials found in all grade level certification requirements dealing with common and alternative methods of disinfection and the use of chemical and microbiological results in the control of plant processes.

WWT 114 Wastewater Plant Safety/1 cr. hr./1 period/1 lec.

Course includes materials found in all grade level certification requirements dealing with safe chemical use and storage including OSHA requirements and the development of a plant and collection system safety program.

**WWT 115 Intermediate Biological Wastewater Treatment
3 cr. hrs./5 periods(2 lec., 3 lab)**

Course includes operation and maintenance of wastewater treatment plants utilizing the activated sludge and trickling filter processes. Included are pretreatment, aeration, settling, aerobic and anaerobic sludge treatment, sludge thickening and disposal, effluent disposal and safety. Use of laboratory results in operation and monitoring as well as the development of a maintenance program are covered. Course is designed to include materials found in Grade II and III Certification requirements.

WWT 199 Cooperative Wastewater Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in wastewater occupations for a minimum of 15 hours per week. Course may be taken two times for a maximum of six credit hours. Course objectives differ each semester.

**WWT 201 Advanced Biological Wastewater Treatment
3 cr. hrs./5 periods(2 lec., 3 lab)**

☐ Prerequisite: WWT 115 or equivalent Grade II Certification.

The use of laboratory results in the activated sludge process and in tertiary treatment are covered, in addition to upgrading operator knowledge and skills in activated sludge treatment, safety, and the development of a maintenance program. Course is designed to include materials found in Grade III Certification requirements.

WWT 203 Applied Chemistry in Water and Wastewater/2 cr. hrs./2 periods/2 lec.

☐ Prerequisite: Grade II Certification in water or wastewater or equivalent background or experience.

Practical experiences of commonly used chemical and microbiological tests found in both water and wastewater facilities. Course is designed to include materials found in Grade III and IV Certification requirements as well as supervisory personnel.

WWT 205 Wastewater Treatment Processes/2 cr. hrs./2 periods/2 lec.

☐ Prerequisite: Grade II Certification or equivalent background or experience.

A study of necessary laboratory treatment processes within wastewater pilot-plants. Course is designed to include materials found in Grade III and IV Certification requirements.

WWT 209 Wastewater Collection Systems/3 cr. hrs./5 periods(2 lec., 3 lab)

Covers maintenance of collection systems including inspection, cleaning, repair, record keeping, safety and development of a maintenance program. Course is designed to include materials found in Grade II and III Certification requirements.

**WWT 215 Applied Chemical and Microbiological Analysis
3 cr. hrs./5 periods(2 lec., 3 lab)**

☐ Prerequisite: Grade II Certification or equivalent background or experience.

An introduction to the chemical and laboratory experiences necessary to perform and calculate test results commonly used in wastewater plant operation and effluent monitoring. Types of tests covered include BOD, suspended solids, pH, fecal coliform, alkalinity, volatile solids and volatile acids. Course is designed to include materials found in Grade III and IV Certification requirements as well as laboratory work at all levels.

WWT 220 Wastewater Hydraulics/3 cr. hrs./5 periods(2 lec., 3 lab)

A pre-professional hydraulics class including characteristics of fluids, flow measurement, pump and valve selection, pump calibration, friction losses, use of tables and basic calculations. Laboratory work covers lift station maintenance, valve maintenance and repair, and pump repair. Course is designed to include materials found in all grade levels of certification, particularly requirements in Grades III and IV.

WWT 225 Physical-Chemical Sewage Treatment/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: WWT 201, 203.

The use of chemical addition as a method of waste treatment. Includes basic chemistry of physical-chemical treatment, chemical makeup and metering process control, monitoring, laboratory controls and carbon absorption. Course is designed to include materials found in Grades III and IV Certification requirements as well as special certification requirements in physical-chemical treatment.

WWT 235 Wastewater Treatment Plant and Collection System Design and Construction/3 cr. hrs./5 periods(2 lec., 3 lab)

☐ Prerequisite: Grade II Certification or equivalent background or experience.

Covers plan reading and pre-professional engineering design including design criteria, specifications and cost estimation. Also included are types of sewer line materials and treatment plant materials for specified uses, proper installation and construction inspection. Course is designed to include materials found in Grade III and IV Certification requirements.

WWT 299 Cooperative Wastewater Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in wastewater occupations for a maximum of 15 hours per week. Course may be taken two times for a maximum of six credit hours. Course objectives differ each semester.

WELDING

WLD 50 Elementary Welding/3 cr. hrs./6 periods(1 lec., 5 lab)

An elementary course in welding, designed to acquaint the student with theory and application of arc welding and oxyacetylene welding and cutting. Practical experience is provided in the making of typical butt, lap, corner, and fillet joints.

WLD 110 Combination Welding/3 cr. hrs./5 periods(2 lec., 3 lab)

Basic techniques in arc welding and oxyacetylene welding.

WLD 110 Soldadura/3 cr. hrs./5 periods(2 lec., 3 lab)

Técnica básica de soldadura eléctrica y octógena.

WLD 115 Blueprint Reading/3 cr. hrs./3 periods/3 lec.

The student after successfully completing the course can interpret blueprints as applied to the welding trade and should be familiar with welding symbols and their significance.

WLD 150 Oxyacetylene Welding/4 cr. hrs./6 periods(2 lec., 4 lab)

Students learn set-up and operation of oxyacetylene welding equipment, how to weld flat, horizontal, vertical and overhead on standard alloys of steel; to braze and solder non-ferrous and ferrous metals and their alloys.

WLD 160 Arc Welding/4 cr. hrs./6 periods(2 lec., 4 lab)

A study of joining metals by electric arc with the use of the electrode; techniques of basic steps essential to all position welding with all types of electrodes; equipment, current electrodes and all specified joint preparations used.

WLD 250 Pipe Welding/4 cr. hrs./6 periods(2 lec., 4 lab)

☐ Prerequisite: WLD 150 and 160, SML 130.

This course covers the contraction and expansion of pipe, flame cutting pipe, beveling pipe, welding different pipe joints, tacking, welding miter joints and flange welding. Plate and pipe certification requirements are included.

WLD 260 Inert Gas Welding/4 cr. hrs./6 periods(2 lec., 4 lab)

☐ Prerequisite: WLD 250.

Students learn techniques and procedures of Tungsten Inert Gas welding (Heli-Arc). Techniques involve proper control settings, proper manipulation of TIG torch, and welding in all positions on non-ferrous and ferrous metals. Also a study and practice of metal inert gas welding (MIG welding).

WLD 299 Cooperative Welding Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a welding occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

WRITING

WRT 5 Poetry Writing/3 cr. hrs./3 periods/3 lec.

Offered concurrently with WRT 205 but not designed for transfer credit.

WRT 6 Short Story Writing/3 cr. hrs./3 periods/3 lec.

Offered concurrently with WRT 206 but not designed for transfer credit.

WRT 62 Literary Magazine Workshop/3 cr. hrs./3 periods/3 lec.

A laboratory course in which students edit, design, layout and produce 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.

WRT 70 Developmental Writing/3 cr. hrs./3 periods/3 lec.

Course provides training in the fundamental skills including grammar, usage, organization and development. It may be taken in preparation for WRT 101 or WRT 150, or for personal improvement.

WRT 72 Sentence Patterns/1 cr. hr./1 period/1 lec.

☐ Prerequisite: Passing score on entry test.

This mini-course teaches the student to write and identify various types of sentence structures and their essential elements, and independent and dependent clauses. Help is given in correcting common sentence errors.

WRT 73 Punctuation/1 cr. hr./1 period/1 lec.

This mini-course covers the mechanics of writing, including punctuation, capitalization, numbers and abbreviations.

WRT 77 Paragraphs/1 cr. hr./1 period/1 lec.

This mini-course provides practice in designing effective paragraphs as basic units in constructing essays. Emphasizes the topic sentence, patterns of development, and clear transitions.

WRT 88 Writing Journal/1 cr. hr./1 period/1 lec.

Course promotes fluency, spontaneity and creativity in writing through a daily practice of writing skills. Entry skills will be evaluated.

WRT 100 Writing Fundamentals/3 cr. hrs./3 periods/3 lec.

Review of sentence structure, paragraph development, and organization of short essays. Designed to prepare students for WRT 101.

WRT 100-A Sentence Development/1 cr. hr./1 period/1 lec.

Review of sentence structure and practice in writing various sentence patterns.

WRT 100-B Paragraph Development/1 cr. hr./1 period/1 lec.

Improvement of skills in adequate and coherent development of paragraphs. Also includes practice in making clear transitions.

WRT 100-C Essay Development/1 cr. hr./1 period/1 lec.

Practice in writing short well organized essays on a variety of subjects.

WRT 101 Writing I/3 cr. hrs./3 periods

☐ Prerequisite: WRT-100 or satisfactory score on writing assessment test.

An introduction to the excitement of good writing with emphasis on the technique and practice of description, explanation and argument. Designed for transfer credit.

WRT 101-A Planning The Essay/1 cr. hr./1 period/1 lec.

☐ Prerequisite: Consent of instructor.

Practice in structuring a college level essay.

WRT 101-B Writing To Persuade/1 cr. hr./1 period/1 lec.

☐ Prerequisite: Consent of instructor.

Instruction and practice in writing argumentative essays.

WRT 101-C Developing A Style/1 cr. hr./1 period/1 lec.

☐ Prerequisite: Consent of instructor.

Instruction and practice in editing and revising to achieve greater clarity of expression and more effective word choice.

✓ **WRT 102 Writing II/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 101.

A continued practice in writing with emphasis on longer and more analytical compositions, including a research paper or annotated papers. Reading may include fiction, poetry, drama or non-fiction. Designed for transfer credit.

✓ **WRT 102-A Critical Essay/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: WRT 101 or consent of instructor.

Writing of short critical essays on selected works of literature.

✓ **WRT 102-B Research/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: WRT 101 or consent of instructor.

This mini-course provides instruction and practice in gathering information, designing and writing a research paper.

✓ **WRT 102-C Writing Reports/1 cr. hr./1 period/1 lec.**

☐ Prerequisite: WRT 101 or consent of instructor.

Instruction and practice in the writing of short formal or informal reports.

✓ **WRT 150 Practical Communications/3 cr. hrs./3 periods/3 lec.**

Practice in effective everyday communication skills. Emphasis is on writing and other communication skills necessary in specific career fields. May transfer as an elective.

✓ **WRT 154 Technical Communications/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 101 or 102.

Students develop writing skills used in formal and informal reports, form completion, letters, abstracts, reviews and other communication skills as prescribed by vocational areas.

✓ **WRT 205 Poetry Writing/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 101 and 102.

An introduction to the techniques used in contemporary poetry; a study of selected poems as examples; practice in applying techniques by writing and discussing original poetry. For transfer, students must have completed WRT 102. This course may be taken as WRT 5 for non-transfer credit.

✓ **WRT 206 Short Story Writing/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 101 and 102.

Introduction to the techniques used in contemporary short fiction, and study of selected short fiction with practice in separate elements of technique through short exercises and writing of original manuscripts. For transfer, students must have completed WRT 102. This course may be taken as WRT 6 for non-transfer credit.

✓ **WRT 215 Advanced Poetry Writing/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 5 or 205 and consent of instructor.

A continuation of poetry writing, with increased emphasis on craft. Candid peer/instructor criticism of both published models and student poems. Offered both semesters. Transfers as an elective.

✓ **WRT 220 Advanced Non-Fiction Writing/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 101 or 102.

A second-year college level course offering extensive practice in writing various forms such as essays, reports, journals and interviews.

✓ **WRT 254 Technical Communications/3 cr. hrs./3 periods/3 lec.**

☐ Prerequisite: WRT 101, 102 and approval of major advisor and instructor.

Basic techniques of writing long and short reports, abstracts, memos, proposals and other forms required in scientific and technical occupations. The course is structured to allow students to work on writings and required in courses and in future occupations.

✓ **WRT 280 Workshop in Tutoring Composition/3 cr. hrs./9 periods/9 lab**

☐ Prerequisite: WRT 101, 102 and consent of instructor.

Instruction and practice in tutoring writing. Designed for transfer credit.

✓ **WRT 280-A Beginning Workshop in Tutoring Composition/1 cr. hr./3 periods/3 lab**

☐ Prerequisite: WRT 101, 102 and consent of instructor.

This is an introductory workshop in tutoring composition. Students receive instruction and practice in tutoring techniques.

WRT 280-B ✓ Intermediate Workshop in Tutoring Composition
1 cr. hr./3 periods/3 lab

☐ Prerequisite: WRT 280A.

This workshop is designed to improve the tutoring skills acquired in WRT 280A. Students receive additional instruction and practice in tutoring techniques.

WRT 280-C ✓ Advanced Workshop in Tutoring Composition/1 cr. hr./3 periods/3 lab

☐ Prerequisite: WRT 280B.

The course is designed to further improve the tutoring skills required in WRT 280B. Students receive additional instruction and practice in tutoring techniques.

WRT 299 ✓ Cooperative Writing Training/3 cr. hrs./16 periods(1 lec., 15 lab)

A supervised cooperative work program for students in a writing occupation for a minimum of 15 hours per week. Course may be taken four times for a maximum of 12 credit hours. Course objectives differ each semester.

YOUTH CARE

YCA 163 ✓ Introduction to Youth Care/3 cr. hrs./3 periods/3 lec.

Surveys the rights, roles and responsibilities of a youth care specialist in the supervision and treatment of children in 24-hour care outside the home, including detention, residential facilities for youth, and foster care. Topical units include the concept of youth care work, understanding the child's behavior, communication skills, problem solving and effective discipline, interviewing and counseling skills and structuring recreation and creative programs. (Identical to AJS 163.)

YCA 263 ✓ Youth Care Techniques/6 cr. hrs./6 periods/6 lec.

☐ Prerequisite: YCA 163.

Provides a variety of options to the student in youth care to increase individual competency in specific skill areas. The course is designed in modular format with one credit/hour modules. Specific competencies included are those considered to be vital to the youth care worker: a) Alternative Family Relationship Building; b) Problem-Solving Techniques; c) Health Awareness; d) Coping With Stress in Youth Care Work; e) Observing and Recording Behavior; f) The Special Needs Child.

YCA 263-A ✓ Alternative Family Relationship Building/1 cr. hr./1 period/1 lec.

☐ Prerequisite: YCA 163.

A one-unit skills module of YCA 263. Provides specialized coursework toward developing competency in the building of positive relationships with youth in alternative care settings. This course builds on concepts which are a part of the YCA 163 content.

YCA 263-B ✓ Problem-Solving Techniques/1 cr. hr./1 period/1 lec.

☐ Prerequisite: YCA 163.

A one-unit skills module of YCA 263. Provides specialized coursework toward developing competency in problem-solving in youth care situations, including principles of problem-solving, identification of problems and problem ownership, seeking alternatives in problem-solving, reaction and response, and consequences.

YCA 263-C ✓ Health Awareness/1 cr. hr./1 period/1 lec.

☐ Prerequisite: YCA 163.

A one-unit skills module of YCA 263. Provides specialized coursework toward developing competency in Health Awareness. Includes recognizing and responding to the needs of the malnourished child, effects of physical health on behavior, techniques for implementing health awareness in a youth care setting.

YCA 263-D ✓ Coping With Stress in Youth Care Work/1 cr. hr./1 period/1 lec.

☐ Prerequisite: YCA 163.

A one-unit skills module of YCA 263. Provides specialized coursework toward developing competency in awareness of stress factors in Youth Care, recognizing levels of personal stress related to youth care, techniques for coping with stress and avoiding burnout.

YCA 263-E ✓ Observing and Recording Behavior/1 cr. hr./1 period/1 lec.

☐ Prerequisite: YCA 163.

A one-unit skills module of YCA 263. Provides specialized coursework towards developing competency in observation and recording the behavior of youth in a youth care setting. Includes the development of observational and feedback skills; reporting as it relates to youth care; setting reporting priorities and developing assessment skills.

✓ **YCA 263-F The Special Needs Child/1 cr. hr./1 period/1 lec.**

□ Prerequisite: YCA 163.

A one-unit skills module of YCA 263. Within the context of youth care, provides specialized coursework towards developing competency in understanding the needs of and techniques for working with children who have special needs. Among these needs categories are learning disabled, physically handicapped, emotionally handicapped, mentally retarded, dangerous delinquent, autistic, and others. One topic would be chosen for emphasis.

✓ **YCA 290 Field Experience/3 cr. hrs./16 periods(1 lec., 15 lab)**

Provides participation in community administration of justice and youth care agencies so students gain exposure to and experience in the practical application of classroom knowledge. Bi-weekly seminars are conducted to discuss theory and practice pertinent to the agency experience. 6 units of Field Experience is required for Youth Care majors.

APPRENTICE RELATED INSTRUCTION

The following courses are offered cooperatively with local and state indentured apprenticeship committees.

ASSOCIATED GENERAL CONTRACTORS

AGC 50-51 Surveying I, II/5-5 cr. hrs./5 periods

AUTOMOTIVE APPRENTICESHIP PROGRAM

✓ **AAT 101 Automotive Electrical Systems/3 cr. hrs./3 periods/3 lec.**

The study of basic electrical theory and nomenclature as it applies to today's automobile systems. Includes identification and servicing of automotive electrical units.

✓ **AAT 102 Automotive Power Plant/3 cr. hrs./3 periods/3 lec.**

The study of types of automotive engines and their support systems.

✓ **AAT 103 Automotive Engine Analysis & Service/3 cr. hrs./3 periods/3 lec.**

□ Prerequisite: AAT 102.

The study of servicing carburetors, ignition, and exhaust systems with emphasis on testing procedures.

✓ **AAT 104 Automotive Brake Systems/3 cr. hrs./3 periods/3 lec.**

The study of hydraulic brake systems, system diagnosis, and repair procedure.

✓ **AAT 105 Automotive Suspension and Steering/3 cr. hrs./3 periods/3 lec.**

The study of the chassis suspension and steering with emphasis on front end alignment and wheel balancing procedures.

✓ **AAT 106 Automotive Drive Train/3 cr. hrs./3 periods/3 lec.**

The study of the drive train from the transmission to the axles. Identification of various designs and repair procedures.

✓ **AAT 107 Automotive Engine Rebuilding Procedures/3 cr. hrs./3 periods/3 lec.**

The study of automotive engine rebuilding procedures and the necessary machining of engine parts.

✓ **AAT 108 Automotive Heating and Refrigeration/3 cr. hrs./3 periods/3 lec.**

The study of refrigeration, heating, and ventilation systems including system diagnosis, service, and repair procedures.

✓ **AAT 109 Automotive Parts Management/3 cr. hrs./3 periods/3 lec.**

The study of parts numbering, storage, inventory control, ordering, and stocking techniques.

✓ **AAT 110 Automotive Service Department Management/3 cr. hrs./3 periods/3 lec.**

The study of marketing techniques including flat-rate schedules, work scheduling, and personnel development.

BRICKLAYING

✓ BKL 50-55 Bricklaying I-VI/@ 5 cr. hrs./6 periods (4 lec., 2 lab)

BUILDING CONSTRUCTION TECHNOLOGY

✓ BCT 50 Building Trade Mathematics/5 cr. hrs./5 periods/5 lec.

✓ BCT 51 Building Trades Blueprint Reading/5 cr. hrs./5 periods/5 lec.

✓ BCT 60-61 Welding I, II/4-4 cr. hrs./6 periods (2 lec., 4 lab)

CARPENTRY

- ✓ CRP 50 Carpentry History, Tools and Materials/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 51 Carpentry Foundations and Forms/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 52 Carpentry Exterior Finish/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 53 Reinforced Concrete and Heavy Construction/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 54 Carpentry Interior Finish/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 55 Carpentry Roof Framing/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 56 Carpentry Stair Building/5 cr. hrs./6 periods (4 lec., 2 lab)
- ✓ CRP 57 Blueprint Reading and Estimating/5 cr. hrs./6 periods (4 lec., 2 lab)

FLOOR COVERING

- ✓ FLR 50 Introduction to Floor Covering/5 cr. hrs./5 periods/5 lec.
- ✓ FLR 51 Tile and Linoleum/5 cr. hrs./5 periods/5 lec.
- ✓ FLR 52 Carpet/5 cr. hrs./5 periods/5 lec.

GLAZING

- ✓ GLZ 50 Orientation to the Glazing Trade/5 cr. hrs./5 periods/5 lec.
- ✓ GLZ 51 Glazing, Tools, Equipment and Materials/5 cr. hrs./5 periods/5 lec.
- ✓ GLZ 53 Blueprint Reading and Sketching/5 cr. hrs./5 periods/5 lec.
- ✓ GLZ 54 Store Front Construction and Glazing/5 cr. hrs./5 periods/5 lec.
- ✓ GLZ 55 Locks, Latches and Door Closers/5 cr. hrs./5 periods/5 lec.

IRONWORKING

- ✓ IRW 50 Introduction to Trade Science/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 51 Reinforcing Blueprint Reading/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 52 Basic Welding/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 53 Advanced Welding/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 54 Rigging and Safety/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 55-56 Structural Blueprint Reading I, II/3-3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 57 Ornamental Iron I/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 58 Steel Detailing and Fabrication/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 59 Ornamental Iron II/3 cr. hrs./4 periods (3 lec., 1 lab)
- ✓ IRW 64 Intermediate Combination Welding/3 cr. hrs./5 periods (2 lec., 3 lab)
- ✓ IRW 66 Advance Combination Welding/3 cr. hrs./5 periods (2 lec., 3 lab)

LATHING

- ✓ LTH 50 Lathing I/5 cr. hrs./5 periods/5 lec.
- ✓ LTH 51 Ceiling and Wall Construction/5 cr. hrs./5 periods
- ✓ LTH 52-53 Blueprint Reading and Sketching I, II/5-5 cr. hrs./5 periods

OPERATING ENGINEERS

- ✓ OEG 50-51 Diesel Engine I, II/5-5 cr. hrs./5 periods/5 lec.
- ✓ OEG 52 Equipment Structure and Function/5 cr. hrs./5 periods/5 lec.
- ✓ OEG 53 Transmission of Power I/5 cr. hrs./5 periods/5 lec.
- ✓ OEG 54 Transmission of Power II/4 cr. hrs./5 periods (3 lec., 2 lab)
- ✓ OEG 55 Construction Material Application/5 cr. hrs./5 periods/5 lec.
- ✓ OEG 56-58 Grades, Plans and Earthwork I-III/@ 5 cr. hrs./5 periods/5 lec.
- ✓ OEG 59 Basic Electricity and Wiring/5 cr. hrs./5 periods/5 lec.
- ✓ OEG 62 Plant Equipment Structure and Function/5 cr. hrs./5 periods/5 lec.
- ✓ OEG 63 Construction Material Processes/5 cr. hrs./5 periods/5 lec.
- ✓ OEG 64 Mathematics for Operating Engineers/3 cr. hrs./3 periods/3 lec.
- ✓ OEG 65 Mechanical Drawing for Operating Engineers/3 cr. hrs./3 periods/3 lec.
- ✓ OEG 66-68 Refrigeration I-III/@ 5 cr. hrs./5 periods/5 lec.

PAINTING & DECORATING

- ✓ PNT 50 Introduction to the Painting Trade/5 cr. hrs./5 periods/5 lec.
- ✓ PNT 51 Color Harmony and Design/5 cr. hrs./5 periods/5 lec.
- ✓ PNT 52 Blueprint Reading and Estimating/5 cr. hrs./5 periods/5 lec.
- ✓ PNT 53 Wall Covering/5 cr. hrs./5 periods/5 lec.
- ✓ PNT 54 Drywall Taping/5 cr. hrs./5 periods/5 lec.
- ✓ PNT 55 Industrial Painting/5 cr. hrs./5 periods/5 lec.

PLASTERING AND CEMENT MASONRY

- ✓ PCM 50 Related Mathematics and Science/5 cr. hrs./5 periods/5 lec.
- ✓ PCM 51 Trade Theory/5 cr. hrs./5 periods/5 lec.
- ✓ PCM 52 Blueprint Reading for Plaster and Cement Masons/5 cr. hrs./5 periods/5 lec.
- ✓ PCM 53 Drafting and Sketching/5 cr. hrs./5 periods/5 lec.
- ✓ PCM 54 Estimating and Building Codes/5 cr. hrs./5 periods/5 lec.
- ✓ PCM 55 Trade Practices/5 cr. hrs./5 periods/5 lec.

PLUMBING AND PIPEFITTING

- ✓ PFT 50 Plumbing and Pipefitting I/5 cr. hrs./5 periods/5 lec.
- ✓ PFT 51 Plumbing and Pipefitting II/4 cr. hrs./5 periods (3 lec., 2 lab)
- ✓ PFT 52 Plumbing and Pipefitting III/5 cr. hrs./5 periods/5 lec.
- ✓ PFT 53 Plumbing and Pipefitting IV/4 cr. hrs./5 periods (3 lec., 2 lab)
- ✓ PFT 54-58 Plumbing V-IX/@ 5 cr. hrs./5 periods/5 lec.
- ✓ PFT 59 Plumbing X/4 cr. hrs./5 periods (3 lec., 2 lab)
- ✓ PFT 60-61 Pipefitting V-VI/4-4 cr. hrs./5 periods (3 lec., 2 lab)
- ✓ PFT 62 Pipefitting VII/5 cr. hrs./5 periods/5 lec.
- ✓ PFT 63-65 Pipefitting VIII-X/@ 4 cr. hrs./5 periods (3 lec., 2 lab)

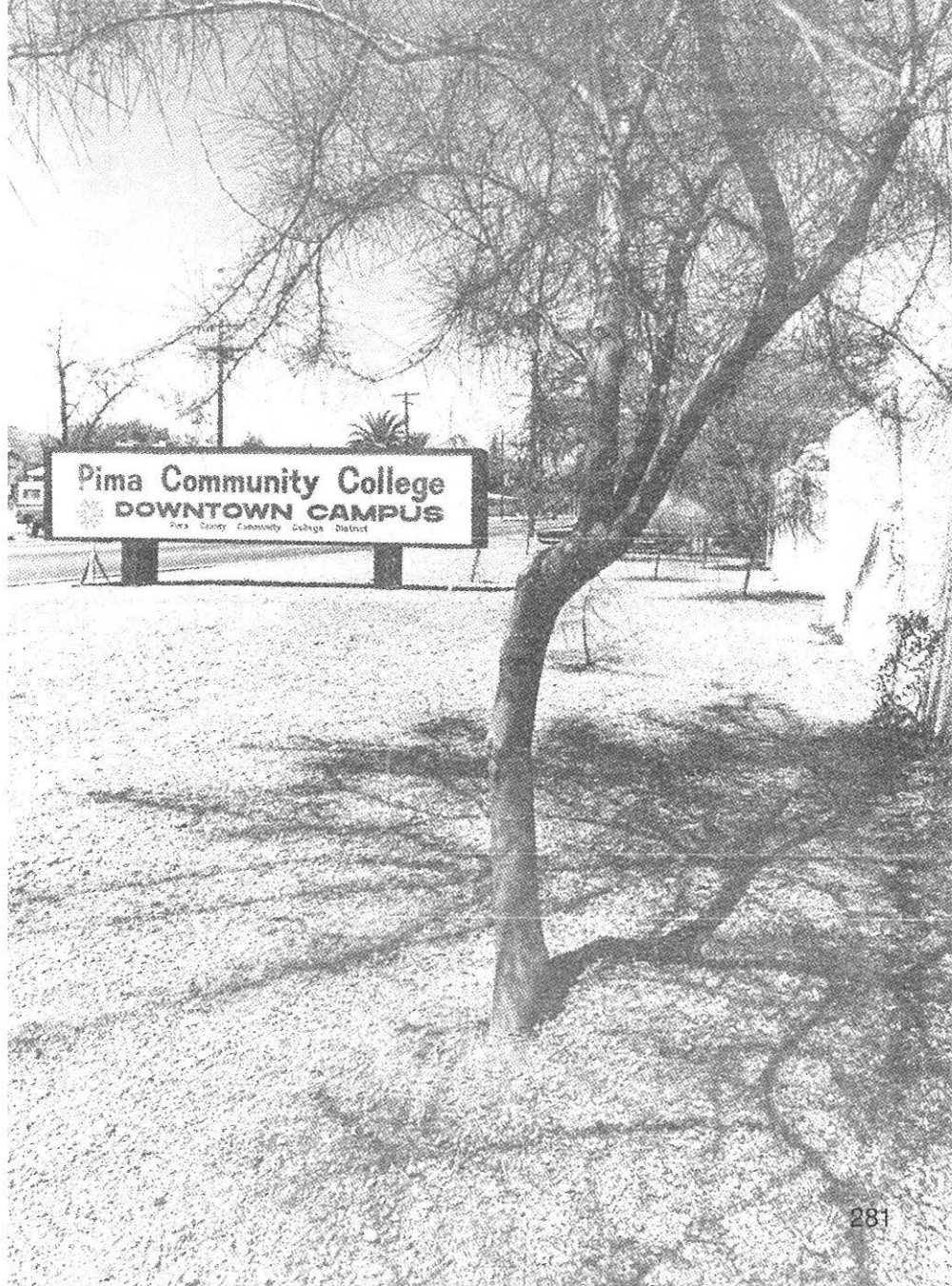
SHEET METAL

- ✓ SML 50 Introduction to the Sheet Metal Trade/5 cr. hrs./5 periods/5 lec.
- ✓ SML 51-55 Apprentice Sheet Metal I-V/@ 5 cr. hrs./5 periods/5 lec.
- ✓ SML 56 Apprentice Air Conditioning/5 cr. hrs./5 periods/5 lec.

THEORY AND PRACTICE OF ELECTRICITY

- ✓ TGE 50-52 Electrical Theory I-III/@/6 cr. hrs./6 periods/6 lec.
- ✓ TGE 53-55 Advanced Apprenticeship Training I-III/@/1 cr. hr./1 period/1 lec.
- ✓ TGE 56 Advanced Apprenticeship Training IV/2 cr. hrs./2 periods/2 lec.
- ✓ TGE 57 Advanced Apprenticeship Training V/1 cr. hr./1 period/1 lec.
- ✓ TGE 58-60 Advanced Apprenticeship Training VI-VII/@/6 cr. hrs./6 periods/6 lec.
- ✓ TGE 61 Advanced Apprenticeship Training IX/2 cr. hrs./2 periods/2 lec.
- ✓ TGE 62 Advanced Apprenticeship Training X/3 cr. hrs./3 periods/3 lec.
- ✓ TGE 63-64 Advanced Apprenticeship Training XI-XII/1-1 cr. hrs./1 period/1 lec.
- ✓ TGE 65 Advanced Apprenticeship Training XIII/2 cr. hrs./2 periods/2 lec.
- ✓ TGE 66-68 Advanced Apprenticeship Training XIV-XVI/@/6 cr. hrs./6 periods/6 lec.

Governing board and faculty



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C. Theodore Kraft, Chairman (Cochise County), term expires	1981
Don R. Preston, Vice-Chairman (Graham County)	1981
Elizabeth A. Packard, Secretary (Coconino County)	1982
Johnny Gregovich, Treasurer (Gila County)	1982
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Dwight W. Patterson (Ex-Officio)	
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Constance Howard, Director



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M.A.—University of South Dakota

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B.A.—Montezuma Pontifical College
M.A.—Universidad Jaime Balmes
M.Ed.—St. Mary's College

Richard P. Alday, Physical Education
B.S.—Kansas State Teachers College
M.A.—Kansas State Teachers College

Mary H. Allison, Nursing
B.S.N.—University of Arizona

Grace A. Altamirano, Office Education
B.S.—University of Arizona
M.Ed.—University of Arizona

Delfina Alvarez, Counselor
B.A.—University of Arizona
M.Ed.—University of Arizona

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B.S.—University of Arizona
M.Ed.—University of Arizona

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M.Ed.—University of Arizona

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 Ph.D.—University of Arizona
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 M.Ed.—University of Arizona
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 M.S.—George Washington University
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 M.A.—Sacramento State Teachers College
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