Pima Community College Catalog 73/74

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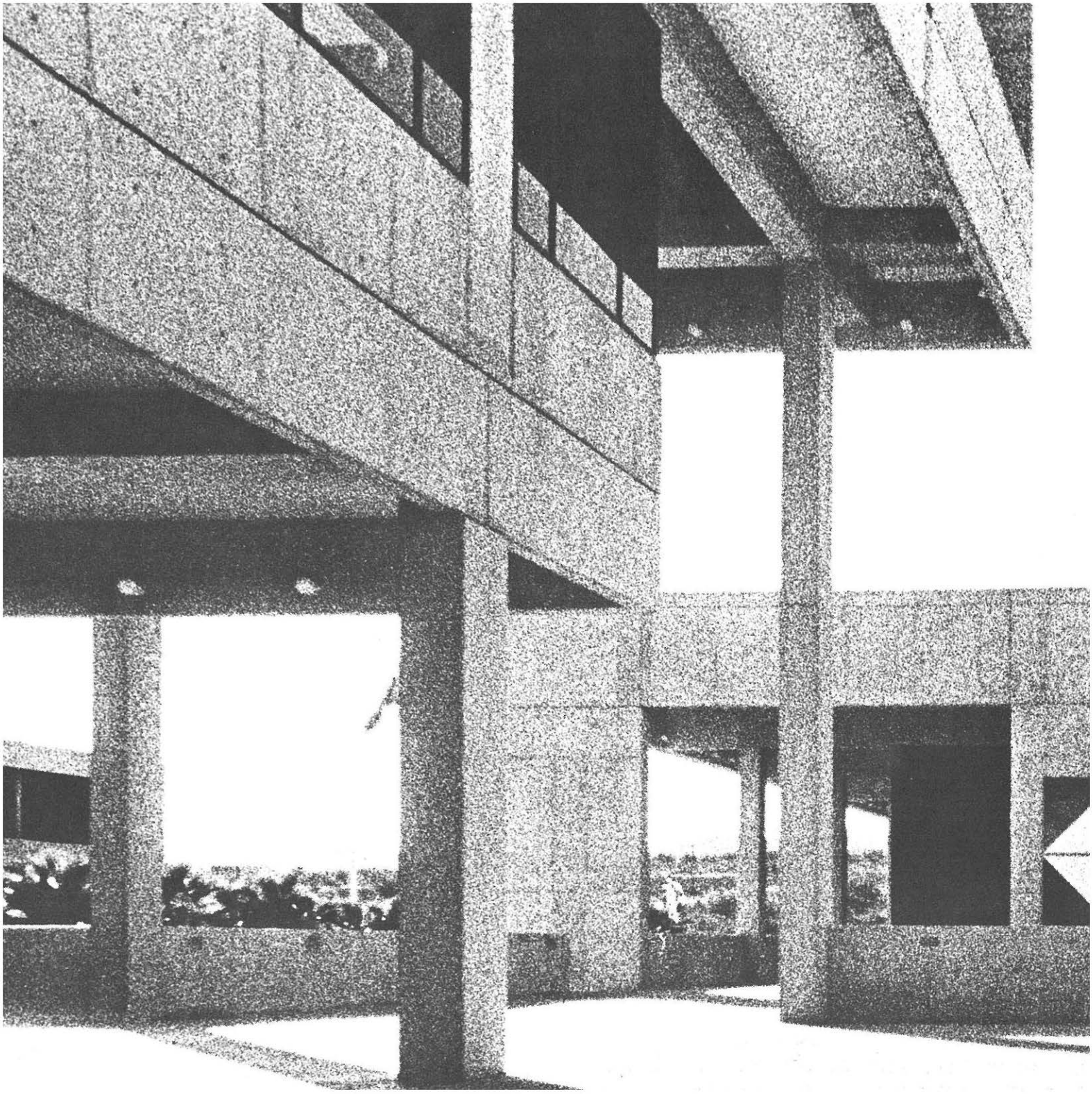
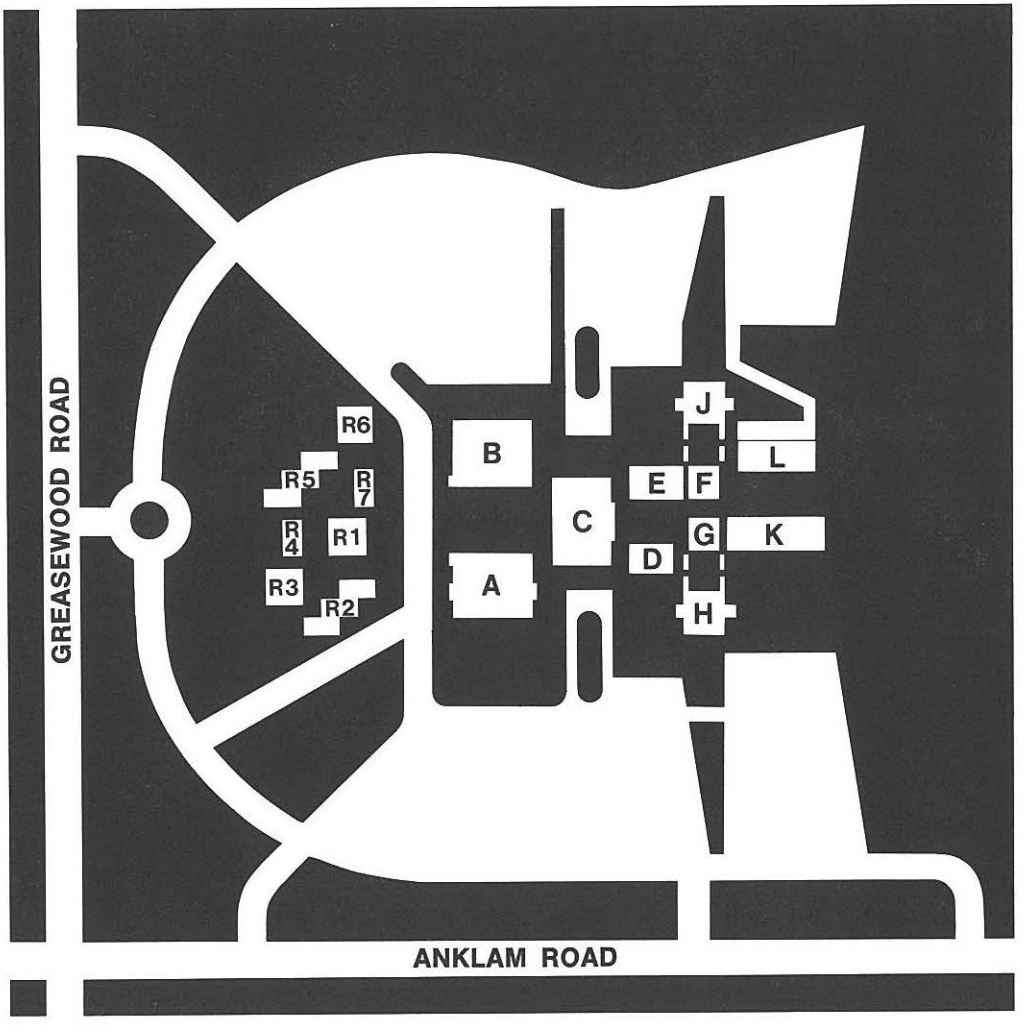
Catalog information on courses and regulations may be changed following a determination by the college s Board of Governors.



to serve the community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ANKLAM ROAD
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The College Campus

Pima Community College is located in the foothills of the Tucson Mountains, three miles west of Tucson's central business district. Its 273-acre campus 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.

No dormitories are included in present plans. Assistance, however, is offered students requiring housing in Tucson.

Facilities include 11 permanent buildings and 14 relocatable or portable buildings (designated as Area R) which were added during the summer of 1972 to take care of increasing enrollments.

A—Student Center
- Ground Floor: Cafeteria, Security
- First Floor: Bookstore, Game Room, Student Information, Student Lounge
- Second Floor: Financial Aid, Registrar, Special Services, Student Activities, Student Government, Student Health Office, Student Placement, Student Organizations

B—Gymnasium
Athletics, Recreation and Physical Education

C—Learning Resource Center
- First Floor: Computer Center, Computer Science Classrooms
- Second Floor: Administrative Offices, Cashier
- Third Floor: Library

D—Fine Arts
- First Floor: Music
- Second Floor: Art

E—Technology
- First Floor: Air Conditioning, Machine Tools, Sheet Metal, Welding
- Second Floor: Drafting, Electronics

F—Instruction/Faculty Offices
- First Floor: Art, Computer Science, Humanities and Math Faculty Offices
- Second Floor: Classrooms

G—Instruction/Faculty Offices
- First Floor: Continuing Education, Health Sciences Faculty Offices
- Second Floor: Classrooms

H—Instruction/Faculty Offices
- Ground Floor: Clothing and Textiles, Studio Art
- First Floor: Classrooms
- Second Floor: Classrooms
- Third Floor: Faculty Offices

J—Instruction/Faculty Offices
- Ground Floor: Early Childhood Development, Foods Lab
- First Floor: Classrooms, Journalism Workshop
- Second Floor: Classrooms, Reading-Language Labs
- Third Floor: Faculty Offices

K—Sciences
- First Floor: Physical Science, Life Sciences, Nursing, Radiologic Technology
- Second Floor: Chemistry, Dental Assisting, Operating Room Technology, Ophthalmic Dispensing Technology, Respiratory Therapy

L—Automotive Lab

Area R
- R1 — Business Classrooms
- R2 — Behavioral Sciences Faculty Offices, Business Classrooms, Business Faculty Offices
- R3 — Classrooms
- R4 — Classrooms
- R5 — Classrooms, Drama Lab, Math Lab
- R6 — Classrooms
- R7 — Classrooms

Student Academic Calendar 1973–74

Fall Semester

Registration Period (Specific times to be announced)	Aug. 21–24
Classes Begin (Day and evening)	Aug. 27
Drop/Add, Late Registration Period	Aug. 27–31
Labor Day Holiday	Sept. 3
Veterans' Day Holiday	Oct. 22
Graduation Application Deadline	Nov. 15
Thanksgiving Day Holiday	Nov. 22–24
Early Registration (For current students — Specific times to be announced)	Dec. 3–7
Final Exams	Dec. 17–20
First Semester Ends	Dec. 20

Spring Semester

Evening Student Registration (Specific times to be announced)	Jan. 7–11
Registration Period (Specific times to be announced)	Jan. 14–16
Classes Begin (Day and evening)	Jan. 17
Drop/Add, Late Registration Period	Jan. 17–19 Jan. 21–24
Rodeo Days Fiesta	Feb. 21–23
Graduation Application Deadline	Apr. 1
Spring Holiday	Apr. 8–13
Final Exams	May 13–16
Graduation	May 16
Second Semester Ends	May 16

1973

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History

The preliminary work of private citizen planning was started in 1964 and culminated with an election November 8, 1966, approving the formation of the Pima County Junior College District.

The college opened to 3,728 students in September, 1970, with most facilities housed temporarily in a hangar at Tucson International Airport and a portion located at a partially completed campus. All college facilities were moved to the 273-acre campus in January, 1971. The enrollment, by the fall of 1972, had risen to 7,616.

Pima Community College Philosophy

The proper functioning of a democratic society and the well-being of the individual depend on his opportunity to develop his abilities in accordance with his own chosen goals. To achieve this end, Pima Community College believes education should be designed as a continuous process which develops a man's awareness both of himself and his environment and, thus, prepares him to function more effectively in a highly complex society.

Each individual in the college community is encouraged to take pride in his own heritage and, at the same time, to develop awareness and appreciation of differences which stem from differing backgrounds.

An institution committed to these ends attempts to create an atmosphere rich in a diversity 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 responsible choices from a wide range of alternatives.

Functions

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."

Operating within this definition, 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.

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 counseling.

Community services related to specific needs including cultural, recreational and general interest programs.

Applicants will be admitted regardless of past performance. The faculty will assist each student in developing an individual program.

Statement of Institutional Goals

- To provide educational opportunities that facilitate human and personal development;
- Provide 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 in 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 is 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.

Accreditation

Pima Community College, which officially opened in September of 1970, is a Candidate for Accreditation with the North Central Association of Colleges and Secondary Schools and is working toward full accreditation.

Study programs contained in this catalog have been approved by the Arizona Community College Board. Courses designed for transfer to four-year institutions also have been accepted by the three state universities.

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

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 multicidad cultural que presenta nuestra comunidad se presta a la creación de un proceso educativo rico en sus raíces, diverso en matería, 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 la posibilidad de aprovechar más procesos educativos 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 educativos donde se proporcionarán programas en las artes, ciencias y humanidades; se llevarán a cabo al terminar la escuela secundaria, y se incluirán cursos vocacionales y técnicos.

Al llevar a cabó 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 indole 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, comuniquese con la Oficina de Admisión.

College Admission

Admission is available to any person upon submission of a completed application form with the exception of the following two groups which are subject to review by the Admissions Committee:

Non-high school graduates under the age of 18 must obtain the approval of their parents or legal guardians before enrolling. Students affiliated with a Pima County high school within the year preceding application to Pima Community College also will be requested to present a written acknowledgment of withdrawal, or approval for concurrent attendance, from the principal of the last high school attended before admission is considered. Students currently under suspension for non-academic reasons must submit a written petition to the Admissions Office at least two weeks prior to registration.

It is important that transfer students, 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.

The open admission policy of the college does not insure admittance to particular courses or programs.

Although no college placement examination is required, students who have taken the American College Test (ACT) or Scholastic Aptitude Test (SAT) are invited to submit the results for use in preparing individual courses of study.

The Admissions Office is open during the summer months to help advise students regarding available programs and courses and to accept applications for admission.

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 for unusual circumstances. Students who wish to transfer credit to Pima must submit 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.

Registration

The college provides a schedule of each semester's classes to each student and applicant. The schedule includes registration instructions and is available in advance of the registration period.

The following items should be noted before registration for classes is completed:

An official transcript of any work at high school level or above should be provided by (1) students who intend to enroll for full-time status — 12 or more credit hours, (2) part-time associate degree candidates, and (3) all veterans enrolled under the GI Bill.

Residency Requirements

The Arizona State Board of Directors for Community Colleges has established the following residency requirements in accordance with Sections 15–791 through 15–795, Arizona Revised Statutes, as amended:

PERSONS AGED 18 YEARS OR MORE: A person who is 18 years old or more whose parents are not domiciled in Arizona does not qualify for in-state status even though he has resided in Arizona the calendar year immediately preceding his 18th birthday. A person who is 18 years old or more must present proof that domicile in the State of Arizona has been established (independent of the circumstances of attendance at an Arizona institution of learning) for one year immediately preceding the first day of classes.

No emancipated person has established a domicile in this state while attending any educational institution in this state as a full-time student, in the absence of a clear demonstration to the contrary.

A person from another state who has reached the age of majority in the state from which he originated may establish a domicile in Arizona subject to the requirements for establishing such domicile in this state.

A woman acquires the domicile of her husband as of the date of marriage. An out-of-state woman who marries a domiciliary of Arizona may have her classification, for tuition purposes, changed to in-state. A wife of an out-of-state person may not qualify for in-state classification, except an in-state woman who marries an out-of-state person may retain in-state classification while continuous attendance is maintained.

A person does not gain or lose in-state status by reason of his presence in any state or country while a member of the Armed Forces of the United States. Military personnel stationed in Arizona, their spouses and dependents shall be considered as in-state residents during the time the member of the Armed Forces is stationed in Arizona. An unemanicipated person whose parent is stationed in Arizona on military orders shall be entitled to classification as an in-state student and to retain this classification while in continuous attendance.

A member of the Armed Forces stationed in Arizona may obtain in-state status by establishing a domicile of one year's duration in Arizona.

An alien student attending on an F-1 (student) visa will be classified as out-of-state. A non-citizen holding a visa which permits establishing an Arizona domicile must meet the same requirements established for a citizen to qualify for in-state classification.

Out-of-state tuition is waived for students enrolling for no more than six units.

PERSONS UNDER 18 YEARS OF AGE: A person who is under 18 years of age and whose parent is not domiciled in Arizona is classified as an out-of-state person for tuition purposes.

A person who is under 18 years of age whose parent has moved to Arizona but has not established a domicile in the state one year prior to the first day of classes as published by the college for the semester for which the person is registering is classified as an out-of-state person for tuition purposes.

A person under 18 years of age has the domicile of the legal guardian if (a) a letter of guardianship of the person, issued by a court, is presented for inspection, and (b) the guardian has been domiciled in Arizona for one year or more immediately preceding the first day of classes.

A person under 18 years of age may be eligible for the status of emancipated minor for tuition purposes. To gain this status, the person must submit clear and convincing evidence that (a) he is self-supporting, (b) he is not living with his parent or guardian, and (c) there has been a complete severance of the parent relationship as to all legal rights and liabilities including care, custody, control and support. After being granted this status, the person must then meet the same conditions required of persons 18 years or more for establishing Arizona domicile.

A person under 18 years of age has the domicile of the parent having legal custody when the parents have been divorced or legally separated. Legal custody must be verified by an inspection of a certified copy of the court order. Where the custody of a minor has been granted to one parent, but the minor has lived with and been supported by the other parent for one year or more next preceding the first day of classes as published by the college, a request may be made to be classified according to the domicile of the supporting parent.

A person under 18 years of age whose parent is a member of the Armed Forces of the United States and stationed in Arizona under military orders shall be entitled to classification as an in-state student. A student, while in continuous attendance toward the degree for which he is currently enrolled, shall not lose his in-state student classification when his parent is thereafter transferred on military orders.

Any unemanicipated person who remains in this state when his parent, who had been domiciled in this state, moves from this state, shall be entitled to classification as an in-state student until attainment of the degree for which he is currently enrolled, so long as he maintains continuous attendance.

While the domicile of an unemanicipated person shall be that of his parents or legal guardian, the date of his parents establishing a domicile in this state shall be considered the date for determining the domicile of the person after he becomes emancipated.
(This statement is provided by the State Board of Community Colleges.)

Questions concerning residency status or requests to change status currently recorded on a student file should be directed to the Office of Admissions and Records. Requests for change of status should be processed before the registration of each term in order to clarify fee status for that term.

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 Assistance Office 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 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 $20 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 the Admissions Office for details.

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

A resolution passed by the State Board of Directors for Community Colleges provides:

"By Arizona statute, in determining the admissibility to the community college of a veteran, honorably discharged who has served in the Armed Forces of the United States for a minimum of two years and who was previously enrolled at a university or community college in Arizona, no failing grades received by such veteran at any Arizona university or community college prior to his military service may be considered.

"The student admitted or re-admitted to the community college under this statute is subject to progression, retention, graduation, and other academic regulations and standards in this catalog."

Admission of Foreign Students

All foreign students must complete and return to the Foreign Student Admissions Office an application for admission and the $10 application fee. Foreign students, as part of the admission procedure, are required to demonstrate proficiency in the use of the English language before being allowed to enroll for classes in which English is the language of instruction. An examination may be required to determine such adequacy. This examination is given prior to the beginning of the student's first semester.

FULL-TIME STUDENTS: A full-time student must submit, in addition to the other requirements, a completed financial statement form and official transcripts of all work done at previous educational institutions. The student also must have completed an academic program equivalent to an American secondary school to be considered for admission. The application and other information must be filed with the Foreign Student Admissions Office no later than two weeks prior to the beginning of registration.

PART-TIME STUDENTS: Any student who wishes to attend Pima on a part-time basis will be considered individually for admission. Graduation from the equivalent of an American secondary school is not of primary importance in this case. The pre-entrance proficiency examination also is not required if the student wishes to attend Pima Community College for the purpose of learning English. The part-time student attending classes on campus must submit his application and other information to the Foreign Student Admissions Office no later than one week prior to the beginning of registration.

FOREIGN STUDENT ADVISER: The Foreign Student Adviser assists the student in planning his schedule, shows him around the campus, helps him in his general orientation to college life, arranges for a host family during holidays and school vacations (if desired), and counsels the student in any personal problems he may wish to discuss.

Fee Schedule — 1973–74

Tuition

County Resident	*None*
**Out-of-County, in-State Resident*	
(12 + hours)	*$500*
Per semester hour (7 to 11)	*42*
Out-of-State Resident	
(12 + hours)	*600*
Per semester hour (7 to 11)	*50*

Registration Fee

Full-time Student (12 + hours)	*60*
Part-Time Student (7 to 11 hours)	*40*
Part-Time Student (1 to 6 hours)	*20*

Laboratory Fees

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

Special Fees

Out-of-State Application (non-refundable)	*10*
Graduation	*10*
Official Transcript (First copy is free)	*1*
Late Registration	*5*
Late Payment of Fees	*5*
Music Lessons (Private)	
Non-Music Majors	
(1 hour/week)	*128*
(½ hour/week)	*64*
***Withdrawal Fee*	*3*
G.E.D. Test	*10*
G.E.D. Test (repeat)	*2*
Excessive Loss or Breakage due to Carelessness	*(up to actual replacement cost)*

Note: Higher per course fees are charged during the summer session as the summer session is required by state law to be self-supporting.

*Arizona students residing in counties which do not have junior colleges may be eligible to have tuition paid by the county of their residence.

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

Refund Policy

REGISTRATION FEE REFUND: The registration fee is not refundable except under the following circumstances:

1. When classes are cancelled by the college, a 100% refund will be made.
2. When the student processes a complete withdrawal from the college prior to the end of the normal drop-add period, a 100% refund (less a $3 withdrawal fee) will be made.
3. When the student adjusts his schedule by officially dropping one or more classes on or before the end of the normal drop-add period, and the amount of his fees is affected, a 100% refund of the applicable fees will be made.

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

1. If the withdrawal or dismissal occurs on or before the seventh (7th) calendar day after the start of the term, a 75% 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% refund will be given. No refund will be made after the fourteenth (14th) day of the term.
3. If the student adjusts his schedule by officially dropping one or more classes on or before the end of the normal drop-add period, and the amount of his tuition is affected, a 75% refund of the applicable tuition will be made.

In order for a withdrawal or a schedule adjustment to be official, it must be processed through the Registrtar's Office. All requests for refunds must be made through the Business Office after appropriate action has been taken in the Registrtar's Office. Students must present their yellow copy of the *Fee Receipt* before a refund will be processed by the Business Office.

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 or 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 will be given to students who have not completed enough course work to receive an "I".)

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

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 regular schedule readjustment period of each term.)

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 of a faculty-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 as student records are subject to audit by many state and federal agencies which provide financial support.

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

Credit by Examination

Credit by examination can be earned for certain courses listed in the catalog. Such credit is awarded upon satisfactory completion of the College Level Examination Program (CLEP) tests or comprehensive examinations administered by a faculty member in the division in which the course is offered.

The maximum number of credits which may be earned through examination, for any one student, is 30 units. Only registered or previously registered students are eligible to request credit through examination.

Degrees

Pima Community College offers both Associate of Arts and Associate of Science degrees in a variety of study areas. 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.

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

Diplomas and Certificates

Diplomas and certificates are awarded in many short-term study program areas. These are programs not carrying the two-year (60 semester hour minimum) requirement for the Associate of Arts and Associate of Science degrees. Diplomas are granted upon the completion of a prescribed program of studies requiring at least 30 semester hours of credit, but less than 60 semester hours of credit.

Certificates are issued at any time upon the completion of any body of work, approved by a program area and involving less than 30 semester hours of credit. Certificate programs can range from a one-day seminar to several semesters.

Summer Session

A summer session of from 8 to 10 weeks in length will be offered during the summer of 1974. Exact dates can be obtained from the Continuing Education Office during the 1974 spring semester. Course offerings will be determined by demand.

As state law requires the summer session to be self-supporting, a higher per course fee is charged for the summer than during the regular academic year.

Continuing and Community Education Programs

In an effort to serve the entire community, the college provides both on and off campus evening classes and also specialized educational programs.

The range of evening classes covers regular credit courses offered under the various degree, diploma and certificate programs; general interest courses; and courses aimed at upgrading specific occupational groups.

A number of off-campus locations are utilized through the cooperation of various agencies including the public school systems in Tucson, the surrounding communities, and in Ajo, Sells and Nogales.

Specialized educational programs offered under Community Education and Development include non-credit short courses, in-service training, community consultation, conferences, institutes, workshops, etc. These programs are free from the usual restrictions of class hours, semesters, the granting of credits or meeting on campus.

Pima Community College is prepared to design brief or extended and flexible educational experiences to meet the needs of any group. Resources for developing and conducting the different training programs are drawn from both the college and the community.

General or Exploratory Studies

To encourage a wide range of curiosity and joy in learning throughout life, Pima Community College emphasizes both open enrollment and freedom of choice among the varied courses offered. The only requirements for specific courses are those essential for completing particular programs.

All who enroll are given every possible opportunity to explore and sample courses leading to the development of new ideas and new skills.

Some will choose to make this aspect the major focus of their studies at Pima.

The exploratory program also offers an individualized approach to education for the student who has yet to defiine his personal or career goals. The student, through the program, is encouraged to sample many ideas, technical skills, arts, crafts and human relationships to help him determine his interests and goals. Classes can be grouped from regular courses or planned to meet individual needs.

Whether the student remains in the exploratory program or moves to another program is a personal choice which can be made at any time. Once a desired career or educational goal is determined, the student then can proceed to move toward it.

Persons interested in general or exploratory studies should discuss and plan their programs with a member of Student Development or an institutional faculty member.

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.

Many active duty service personnel have found it difficult to complete community college educational programs because of frequent transfers and varying requirements of colleges. 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, diploma or certificate to a SOC student who has completed the requirements for graduation whether the student is in attendance at the time of completion of requirements or not. Complete details about the program can be obtained from the Continuing Education Office on campus or from the Davis-Monthan Air Force Base Education Office.

Pre-Discharge Education Program (PREP)

PREP is a Veterans Administration financed on-duty program designed for military service personnel who require refresher studies to better prepare themselves for college entry, vocational training and Air Force career advancement.

Davis-Monthan Air Force Base personnel participating in the program spend 10 or more weeks in classes on base and/or on campus. Among subjects studied are mathematics, reading and writing. To enroll, servicemen or women must have been on active duty for at least six months and obtain a release from their commanding officer permitting them to attend classes.

Although the program is funded by the Veterans Administration, it does not affect VA eligibility for future educational studies under the G.I. Bill. Enrollment is handled by the Continuing Education Office at Pima Community College or the Davis-Monthan Air Force Base Education Office.

student life

Who to See About What

Admission to College ....Registrar or Admissions Office
Athletics
Intercollegiate, Clubs .....Athletic Director
Intramural and Physical Education ....Physical Education Office
Bilingual Programs .....Bilingual Institute Director
Career Planning .....Student Development or Division Directors
Counseling .....Student Development
Employment .....Placement Director
Evening Classes .....Continuing Education Office
Facilities, Use of .....Student Information Office or Facilities Director
First Aid .....Student Health Nurse
Foreign Student Information .....Admissions Office
Grade Changes .....Instructors
Graduation .....Admissions Office
Grants .....Financial Aid Director
Housing Assistance .....Student Information Office
Loans .....Financial Aid Director
Lost and Found .....Security
Migrant Opportunity Program .....Special Services Director
Personal Problems
College .....Student Development Counselor
Family .....Student Development Counselor
Health .....Student Health Nurse
Scholarships .....Financial Aid Director
Student Activities .....Student Activities Director
Student Publications .....Communications Division
Tutoring .....Special Services Office
Veterans Information .....Veterans Assistance Office

Student Services

The Student Services staff is responsible for furnishing the student with what he needs and requests to educate himself — in addition to what is provided by the instructional divisions 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. Most of the Student Services staff is housed in the Student Center.

Student Development

Student Development faculty members are available to provide you with an orientation of the college, academic advising and counseling services.

ORIENTATION: New students are invited to an orientation program held prior to class registration. The orientation is designed to acquaint you, as a new student, with the various elements of the college which might help you reach your academic, vocational or personal goals.

ACADEMIC ADVISING: During class registrations, you will find faculty advisers on hand ready to help you plan your study program. If you have not as yet decided on an academic, vocational or personal goal, counselors will assist you in exploring program options open to you. Should you later decide to change your program of study, a counselor in Student Development can introduce you to an adviser familiar with the requirements of that particular program.

STUDENT COUNSELING: Members of the Student Development faculty provide both academic and personal counseling and are available to evening students as well as those taking day classes.

If you want or need assistance in identifying and clarifying your career or personal goals, counseling is available through individual conferences, career planning laboratories and/or psychological tests.

In regard to personal problems or concerns, the Student Development Office can call upon a variety of community agencies if adequate resources are not available on campus and prepare the road to services best equipped to help you.

Other special programs under Student Development provide assistance to Indian students, ex-offenders and veterans.

No appointment is needed during regular college hours.

Student Activities

Information on student clubs, organizations and cultural events scheduled during the academic year can be obtained from the Student Activities Office.

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

The Student Activities Office also provides information on community events, housing and transportation. Information service personnel, in addition, will help you reserve a meeting room for college activities or post a notice.

Students also are called upon to take part in various college committees set up to make recommendations to the President.

A student handbook giving details on the campus code, housing, student life and vehicle registration will be made available to you at the time you register for classes.

Special Services

Special Services, also known as "El Camino Nuevo" or the new road, assists students who are disadvantaged economically, culturally, socially or physically.

Because of the college's philosophy of accepting students "where they are" and helping them to develop to their fullest capabilities, individualized programs of study are offered those with deficiencies. One of the major Special Services programs is tutoring students for the high school equivalency diploma (G.E.D.) test and in reading, writing, mathematics and Spanish.

Another major program of Special Services is helping physically handicapped students such as transporting wheelchair patients to college and wheeling them to classes, and having student aides take class notes for those unable to use their hands. A student aide also is being trained in the use of sign language to assist deaf students.

A study skill center also has been developed to teach students how to study, how to budget their time, how to use library facilities and how to take class notes.

The Special Services staff, made up of five full-time employes and 45 student aides, also assists in counseling and program development during registration periods; counsels students who are tutored; and helps direct students to agencies where they can get the proper aid or assistance which they might need.

Student Leadership

Students have some voice in college functions, not only through the newly formed student government, but also through the College Council and Board of Governors. Representatives of the student body also sit on various task forces and committees which make recommendations to the President.

Elections of students to the Board of Governors, the College Council and student body government are held in the spring.

Several students are elected annually to the College Council and the Governing Board. Although the student representatives on the Board of Governors cannot cast a vote with the official members, they can voice an opinion on agenda items.

Usually two students, and more on occasion, are required as volunteers to the college's task forces and committees. Those interested in participating should check with either Student Activities or the student government 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.

Student Health Services

Professional assistance, both in emergency and long-term health problems, is offered the student. Workshops and other means of health education also are available to assist students in recognizing and understanding health needs.

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

Accident-sickness insurance is provided Pima Community College students, without additional cost, under a blanket policy. The policy covers students for injuries and illnesses incurred during college activities, traveling to or from the campus or a college related activity. Details of the coverage are included in packets presented students at the time of registration.

Supplementary accident and sickness medical expense insurance may be purchased by students at the Health Services Office, located in the Student Center. The office, in addition, has claim forms available for any injuries sustained while in college-related activities and requiring a doctor's attention.

Financial Aid

A complete program of financial assistance is offered students through scholarships, loans, grants and jobs. The principal 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.

Types of Financial Aid

SCHOLARSHIPS: *A limited number of scholarships have been established for students by generous private donors. The awards range from $20 to $500 and often can be renewed for a second year.*

The available scholarships are:

- Anonymous
Source: Anonymous
Eligibility: Students of American-Indian, Mexican-American, or Negro background.
Value: $250 per year, 1 award each year.

- American Business Women's Association
Source: American Business Women's Association of Tucson.
Eligibility: Female students interested in the Business Field.
Value: $120 per year, 1 award each year.

- Arizona Bank Scholarship
Eligibility: Promising students in Business Field.
Value: $150 per year, 2 awards each year.

- Beau Brummel Club Scholarship
Source: Beau Brummel Club
Eligibility: Black students enrolled in any field of study.
Value: $120 per year, 1 award each year.

- Burr Brown Research Scholarship
Source: Burr Brown Research Corporation
Eligibility: Students in any field of study.
Value: Amounts vary, number of awards vary.

- First National Bank Scholarship
Source: First National Bank of Arizona
Eligibility: Students in the Business Field.
Value: $125 per year, 3 awards each year.

- Ken Harper Music Scholarship
Source: Nan-Zam Productions, Inc.
Eligibility: Student studying music.
Value: $120 per year, 1 award each year.

- John W. Kenny Scholarship
Source: Southern Arizona Bank
Eligibility: Students in the Occupational and Industrial program.
Value: $300 per year, 1 award each year.

- League of Mexican-American Women Scholarship
Source: League of Mexican-American Women
Eligibility: Promising Mexican-American students.
Value: $150 per year, 2 awards each year.

- Marshall Foundation Fund — Allied Health Scholarship
Source: Marshall Foundation
Eligibility: Students enrolled in Allied Health Fields.
Value: Amount varies, number of awards vary.

- William E. Meyer Memorial Scholarship
Source: Sheet Metal and Air Conditioning Contractors Association of Southern Arizona, Inc.
Eligibility: Students in Sheet Metal and Air Conditioning.
Value: $120 per year, 1 award each year.

- J. G. Moore Memorial Scholarship
Source: Mrs. Margery Moore
Eligibility: Promising students interested in becoming teachers.
Value: $325 per year, 2 awards each year.

- Pacific Automotive Scholarship
Source: Pacific Automotive Show
Eligibility: Students enrolled in Automotive field.
Value: $300 per year, 1 award each year.

- Andrew J. Pizzini Memorial Fund
Source: Irene S. Pizzini
Eligibility: Promising and needy students.
Value: Amount varies, number of awards vary.

- Sertoma Club Dental Scholarship
Source: Sertoma Club
Eligibility: Student enrolled in Dental Assisting Program.
Value: $120 per year, 1 award each year.

- Southern Arizona Dental Society Scholarship
Source: Southern Arizona Dental Society
Eligibility: Students enrolled in Dental Assisting Program.
Value: $120 per year, 1 award each year.

- Suburban Women's Club Scholarship
Source: Suburban Women's Club of Tucson
Eligibility: Promising and needy students.
Value: $120 per year, 6 awards each year.

- Tucson Gas and Electric Scholarship
Source: Tucson Gas and Electric Company
Eligibility: Children of Tucson Gas and Electric Company employes.
Value: $220 per year, 2 awards each year, renewable.

• Unitarian-Universalist Women's Federation of Tucson Scholarship
Source: Unitarian-Universalist Women's Federation of Tucson
Eligibility: Students enrolled in Nursing and Business.
Value: $250 a year, 2 awards each year.

• Weatherhead Foundation Scholarship
Source: Weatherhead Foundation
Eligibility: Minority students interested in any health related program.
Value: Amount varies, number of awards vary.

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 large number of Educational Opportunity Grants are offered to students with 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.*

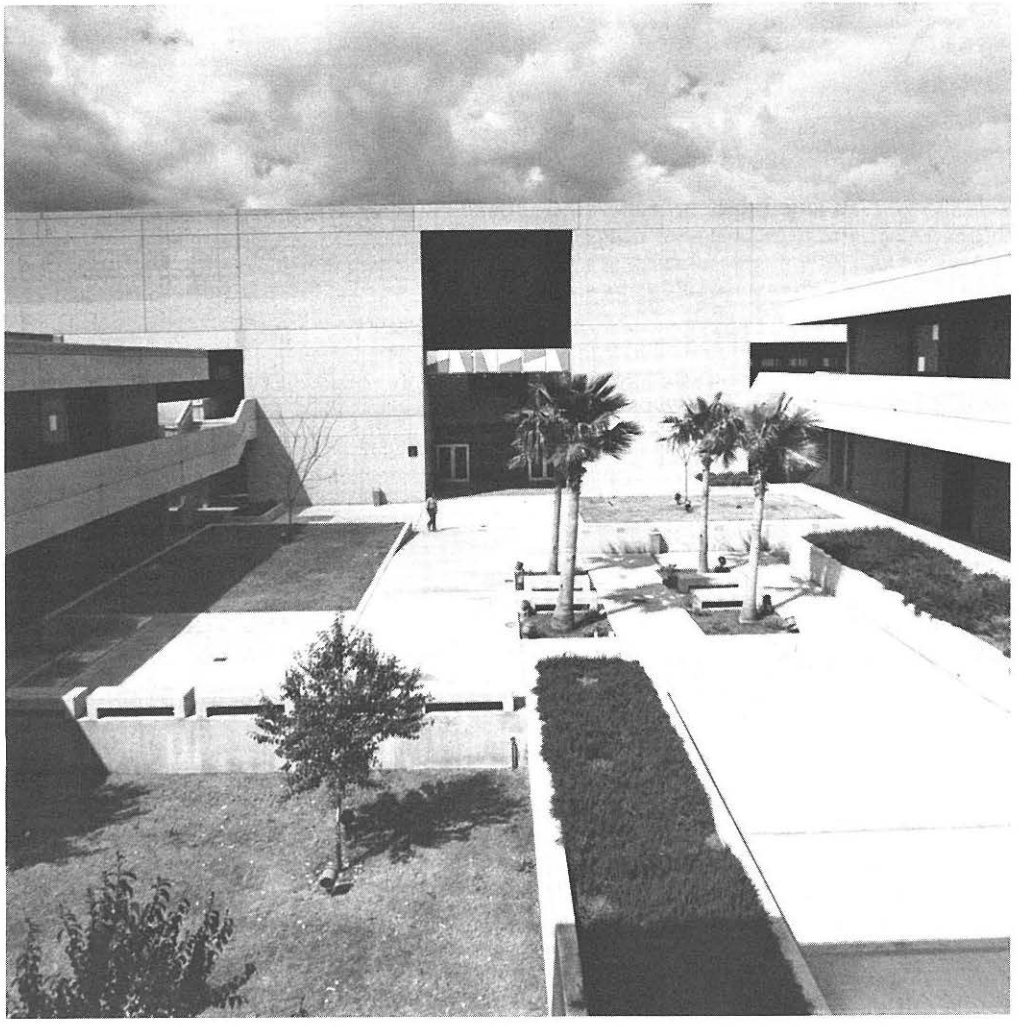
ELIGIBILITY: *Each of the above programs has somewhat different eligibility requirements. In general, financial need is the most important selection factor. The lack of previous academic achievement should not discourage an otherwise deserving financial aid applicant.*

APPLICATION: *Pima Community College, in cooperation with other colleges and universities in Arizona, uses the standard "Arizona Financial Aid Application" form along with the American College Testing Service Family Financial Statement form. Both forms are available in the college 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 Student Financial Aid Office.

Student Employment

The college Placement Office operates a complete student employment service to assist you in qualifying for and securing a full-time or part-time job either on or off campus. Some of the part-time positions are supported by the federal College Work-Study Program. Placement Office personnel also can advise you about getting and adjusting to a full-time job after graduation.



Cooperative Education

The Cooperative Education program attempts to give students practical work experience related to their studies and/or their career goals. Students successfully completing the program receive three hours of college credit per semester.

Two Cooperative Education plans are available, making it possible for a larger number of students to enroll. Full details on the program can be obtained from the Cooperative Education coordinators assigned to each academic division.

THE ALTERNATE PLAN: Two students hold one work station by alternating work and study. One student works while the other attends college full-time, with the two alternating each semester until graduation.

This plan is more attractive to most employers who must have a work station manned full-time by a competent employe in order to meet work schedules. The employer also is assured of having a qualified, steady, intelligent and well motivated employe for two and a half years. Many students also prefer the alternate plan as it best meets their financial needs. Their services, after graduation, will be in greater demand as they will have both education and work experience. There is, in addition, a better chance of earning more than the average graduate.

It usually takes two and a half years to earn an Associate degree under the alternate plan, including summer work and a summer of full-time study. Or, if the working student chooses, he may attend evening college classes.

Students selected for work stations in the alternate plan should agree to remain in the plan until graduation. Some students may be tempted, after a year on the job, to drop out of college and accept work paying more money. This is not encouraged by the college.

THE PARALLEL PLAN: The parallel plan combines work and study with the student working a half day and attending college a half day.

The information gained in class while also working tends to make both study and work more interesting. There is evidence that grades go up when students find work which interests them. They also make better use of their time and apply themselves more diligently. Students who require a continuous income prefer the parallel plan.

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

Employers are aware that their employes are attempting to upgrade their knowledge and also 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 facilities when he has a need for training employes on new equipment or for newly created jobs. The college can work out his training needs while providing an education for the student. The student, at the same time, can earn credits toward a degree or certificate.

Athletics and Sports

Pima Community College offers a cross section of athletic and sports programs to meet a variety of student interests. Students can participate in intercollegiate athletics — introduced for the first time this year, in intramurals or club activities, or in physical education courses.

Complete details on the intercollegiate and club programs can be obtained from the Athletics Office. The intramural and physical education programs are handled by the Physical Education Department.

INTERCOLLEGIATE: Pima is a member of the National Junior College Athletic Association, Region 1, and the Arizona Community College Athletic Conference. Activities include cross country; women's volleyball; wrestling; men's and women's basketball teams; golf; men's and women's tennis teams; baseball; track; and women's softball. Competition will be with university junior varsities and community college teams in the southwest area.

Eligibility requirements are those set by the ACCAC, the NJCAA and Region 1 of the NJCAA. The basic stipulations are that the student be enrolled full-time and that he has not previously completed two seasons of the respective sport. Uniforms and most equipment are provided by the college.

INTRAMURAL: This has been the basis of the college athletic program and will continue to be a mainstay even with the introduction of intercollegiate athletics. Students as well as college faculty and staff members participate in intramurals regardless of their skill level in any of the activities.

More than 20 activities currently are available and others are developed when enough interest is shown. Among those now offered are bowling, archery, basketball, baseball, golf, tennis, volleyball and a running marathon. Individual and team entries are accepted.

Persons enrolling in intramurals must be associated with the college and provide their own uniforms. A physical may be required for some of the sports activities such as wrestling and weightlifting.

CLUBS: Athletic clubs provide for an informal gathering and participation of people with similar interests and involve students, faculty and staff members. Activities currently offered under this program are men's softball, soccer, swimming, rifle, basketball, chess, badminton, gymnastics, judo, rugby and bicycling. Other clubs can be developed when enough interest is shown.

Competition is against other similar college clubs, Y.M.C.A. and Y.W.C.A. teams, military bases in the state and northern Mexican institutions. Physicals may be required for some of the activities.

PHYSICAL EDUCATION: Participation in the wide variety of physical education courses and programs offered by the college is encouraged of each student. Students can select a lifetime sport or recreational activity meeting their own interest and ability.

Publications
Student publications include a newspaper, "The Community," which is published regularly and a literary magazine which is expected to be published once a semester.

Those who would like to serve on the staff of the newspaper, in any capacity, should contact either the Communicative Arts Division or the Student Activities Director.

Students interested in helping publish the magazine should register for Communicative Arts 62. Articles also can be contributed and these should be submitted to either the magazine office in room 135 of Building J or the Communicative Arts Division, located on the third floor of Building J.

Learning Resources Center (Library)
The college library, located on the third floor of Building C, currently has over 30,000 volumes as well as government publications, pamphlets, maps, microforms, recordings, slides and filmstrips. About 900 serial publications are received regularly and back issues of most are available on microform (fiche or reel). Photoduplication services for bound and microform materials can be obtained at a nominal cost.

The center's reading room contains tables and study carrels for over 700 students, and members of the public services staff are available at all times to assist in research, explain library resources and offer other reference services.

A library manual describing the organization and services of the center can be obtained at the circulation desk.

programs

ARTS / FINE ARTS
- Applied Arts and Design
- Art
- Arts and Crafts
- Drama
- Media Technology
- Music

BILINGUAL

BUSINESS and MANAGEMENT
- Accounting
- Business Administration Transfer
- Computer Science
  - Computer Operator
  - Computer Programmer/Analyst
  - Computer Systems Programmer
  - Data Control Technician
  - Key Punch Operator
- Finance
- Library Technician
- Mid-Management
- Office Occupations
  - Administrative Assistant
  - Clerk-Typist
  - Receptionist
  - Secretary, Executive
  - Secretary, General
  - Secretary, Legal
  - Secretary, Medical
  - Service Representative
- Real Estate

EDUCATION
- Elementary or Special
- Secondary

ENGINEERING

GENERAL STUDIES / EXPLORATORY

HEALTH SCIENCES
- Dental Assisting Technology
- Emergency Medical Technology
- Nursing
  - Nursing Assistant
  - Nursing, Practical
  - Nursing, R.N.
  - Nursing, Transfer
- Operating Room Technology
- Ophthalmic Dispensing Technology
- Radiologic (X-ray) Technology
- Respiratory Therapy

HOME ECONOMICS
- Alteration Specialist
- Apparel Design
- Child Development/Family Relations
- Clothing/Textiles/Related Arts
- Consumer Service in Food
- Dietetic Technician
- Early Childhood Education
- Fashion Design
- Fashion Merchandising
- Food/Human Nutrition/Dietetics
- Food Service Management
- General Home Economics
- Home and Family Living
- Interior Design
- Interior Design Technician
- Merchandising/Fashion Promotion
- Seamstress, Professional
- Teachers Aide/Assistant

JOURNALISM
LIBERAL ARTS and SCIENCES
Behavioral or Social Sciences
Biology
Chemistry
Communicative Arts
Economics
Geography
Geology
Health Education
History
Humanities
Languages
Life Sciences
Literature
Mathematics
Philosophy
Physics
Political Science
Religions (Comparative)
Speech

PHYSICAL EDUCATION
PRE-ENVIRONMENTAL
PRE-LAW
PRE-MEDICAL and PRE-DENTAL
PRE-OPTOMETRY
PRE-PHARMACY
PRE-VETERINARY

PUBLIC SERVICES
Corrections
Fire Science
Law Enforcement
Military Science
Park/Forest Service Technician
Recreation
Social Services

TECHNOLOGIES
Air Conditioning and Sheet Metal
Automotive Mechanics
Automotive Technology
Aviation
Drafting
- Architectural
- Electro-Mechanical
- Mechanical

Electronics
Tool and Machine Technology
Welding

Arts/FineArts

APPLIED ARTS AND DESIGN

This two-year program provides an opportunity for development in the areas of commercial graphics, photography, industrial design, furniture design and signwriting.

Associate of Arts Degree
Job Oriented

Required Courses		Units
Perception	ART 1	4
Graphics I-II	ART 10, 20	6–7
Art and Culture	ART 15	3
Functional Design I	ART 12	3
Audio-Visual Comm.	ART 23	4
Photography	ART 13	3
Visual & Spacial Arts	ART 21	3–4
Art History	ART 25	3
Art Elective	ART 12, 20, 22 or 23	6
		35–37
General Education Requirements		
Humanities I-II	HUM 10-11	8
Writing I-II	COM 1-2	6
Tech. Drafting I	DFT 55	3
Human Relations	MAN 58	3
Elective		6
		61–63

ART

Students completing the two-year Fine Arts program will have a sufficient background to transfer to a university or a professional school for further studies in painting, sculpture, printmaking, crafts, art history or commercial graphics. Students should follow the first two-year study requirements of the university or professional school to which they plan to transfer. Those planning to transfer to the University of Arizona will be required to demonstrate their abilities in one or two semesters before acceptance of some credits is determined.

Associate of Arts Degree
For Transfer

Required Courses		Units
Perception	ART 1	4
Art and Culture I-II	ART 15, 25 sec.	6
Color and Design	ART 21 sec.	3
Life Drawing	ART 21 sec.	3
Painting	ART 21 sec.	3
Art History	ART 25	3
Art Electives	ART 9, 10, 12, 13, 20 or 23	15–18
		37–40
General Education Requirements		
Humanities I-II	HUM 10-11	8
Writing I-II	COM 1-2	6
Sciences		6–8
Behavioral or Social Sciences		6
		63–68

ARTS AND CRAFTS

Graduates of the Arts and Crafts program will be artistically proficient in at least one medium, with some background in several media — such as print making, painting, sculpture, ceramics, silversmithing, fabrics and leather. Required under the program is a total of 34 credit hours in art courses and a total of 30 credit hours in courses other than art.

Associate of Arts Degree

Required Courses		Units
Perception	ART 1	4
Graphics I	ART 10	3
Photography	ART 13	3
Art and Culture	ART 15	3
Functional Design I	ART 12	3
Crafts Workshop	ART 9	3
Art Electives		15
		34
General Education Requirements		
Writing I-II	COM 1-2	6
Behavioral or Social Sciences		6
Humanities		3–4
Industrial Technology		3
Electives		14
		64–65

DRAMA

Students completing the two-year Drama program will have received experience both in performing and working with others on various theatrical production tasks. They should qualify for transfer to a four-year college or university to work toward a Bachelor of Arts degree in Drama if they complete a two-year foreign language requirement, or for a Bachelor of Fine Arts in Drama if they elect courses in art, music, social (behavioral) sciences or industrial technologies in the first year and Group Discussion (SPE 30) and Oral Interpretation (SPE 36) in the second year.

Students should follow the first two-year study requirements of the four-year institution to which they plan to transfer.

Drama Education
Associate of Arts Degree
For Transfer

Required Courses		Units
Intro. to Acting I-II	DRA 5-6	6
Intermediate Acting I-II	DRA 48-49	6
Make-Up	DRA 15	1
Stagecraft and Prod. I-II	DRA 20-21	4
Advanced Stagecraft	DRA 22	2
Theater History I-II	DRA 40-41	6
Electives, suggested	DRA 1, 9	1–3
		26–28
General Education Requirements		
Humanities I-II	HUM 10-11	8
Writing I-II	COM 1-2	6
Science		8
Teaching Minor		6
Behavioral or Social Sciences		6
Elective (dance or music suggested)		2
		62–64

Drama Production
Associate of Arts Degree
For Transfer

Required Courses		Units
Intro. to Acting I-II	DRA 5-6	6
Intermediate Acting I-II	DRA 48-49	6
Make-up	DRA 15	1
Stagecraft and Prod. I-II	DRA 20-21	4
Advanced Stagecraft	DRA 22	2
Theater History I-II	DRA 40-41	6
Voice and Articulation	SPE 15	2
Oral Interpret. of Literature	SPE 36	3
Electives (suggested)	DRA 1, 9	1–3
		31–33
General Education Requirements		
Writing I-II	COM 1-2	6
Humanities I-II	HUM 10-11	8
Behavioral or Social Sciences		6
Science		4
Elective (dance, fencing, music suggested)		2–4
		57–61

Drama Theory
Associate of Arts Degree
For Transfer

Required Courses		Units
Intro. to Acting I-II	DRA 5-6	6
Make-up	DRA 15	1
Stagecraft and Prod. I-II	DRA 20-21	4
Theater History I-II	DRA 40-41	6
Electives (suggested)	DRA 1, 9, 22, 48 or 49	3–6
		20–23
General Education Requirements		
Writing I-II	COM 1-2	6
Humanities I-II	HUM 10-11	8
Language		16
Science		8
Behavioral or Social Sciences		6
Elective (music or dance suggested)		1
		65–68

MEDIA TECHNICIAN

The two-year Instructional Media Technology program provides a basic knowledge and skills in the area of communigraphics, reprographics, telecommunications and audio-visual equipment repair and maintenance. A student may choose to specialize in one of the four optional areas, or he may prefer not to specialize but select courses from each of the areas for general preparation.

The program is designed to prepare 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 and in the operation of the Learning Resource Center.

One-Year Certificate Program
For Direct Employment

Required Courses		Units
Library Public Services	LMT 52	3
Communigraphics I	MET 50	3
Media Terminology	MET 80	1
Impl. of Media Technology	MET 84	3
Telecommunications-TV	MET 90	3
Cinematography	MET 53	3
Repair & Maintenance	MET 70	3
Media Technology I	MET 81	3
		22

Associate of Arts Degree
For Direct Employment

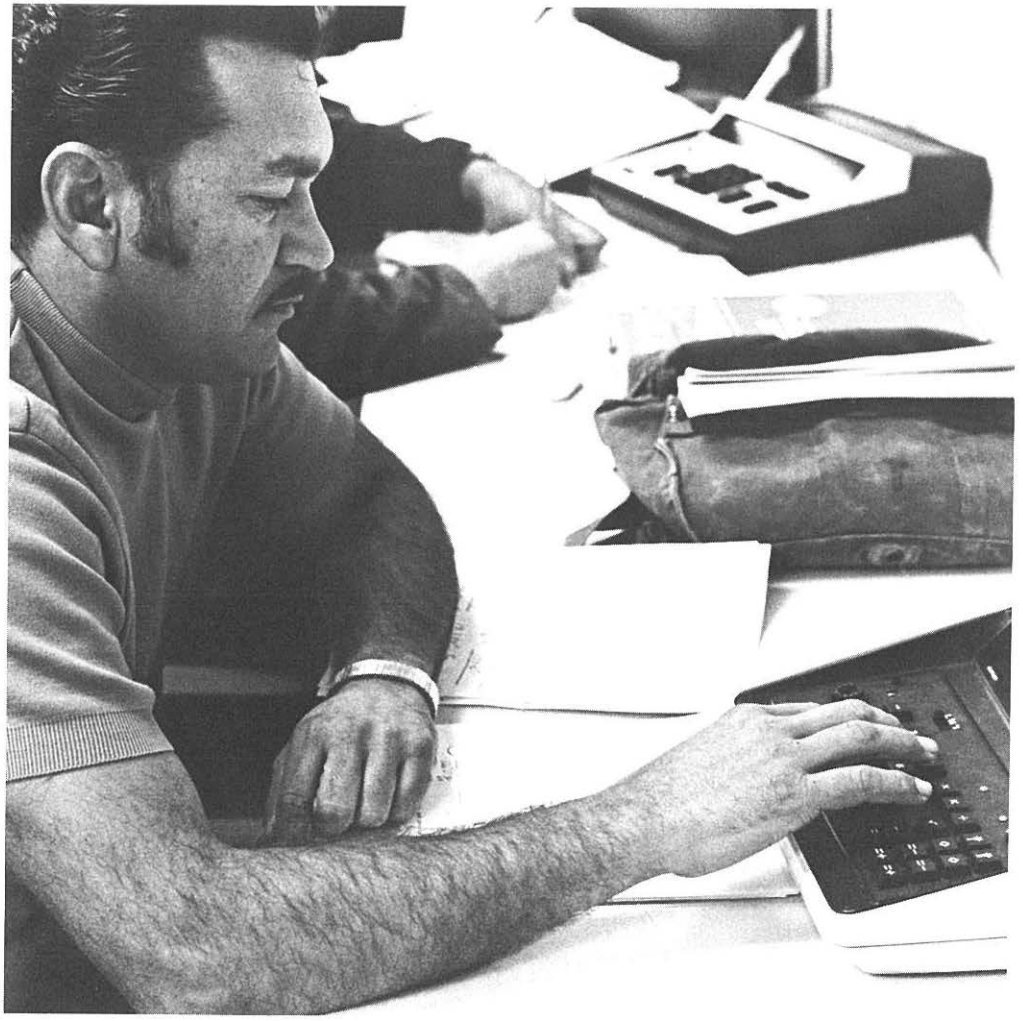
Required Courses		Units
Communigraphics I	MET 50	3
Cinematography	MET 53	3
Co-op Training	MET 299	6
Repair & Maintenance	MET 70	3
Media Terminology	MET 80	1
Media Tech. I-II	MET 81-82	6
Impl. of Media Technology	MET 84	3
Telecommunications-TV	MET 90	3
		28
General Education Requirements		
Library Public Services	LMT 52	3
Writing I-II	COM 1-2	6
Intro. to Computers	CSC 47	3
Art & Design		3
Sciences		6
Humanities		6
Behavioral or Social Sciences		3
Ethnic Studies		3
Electives		3
		64

MUSIC

The suggested Music 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. All courses listed are merely suggestions. 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		Units
Music Theory I-IV	MUS 3-6	16
Music History & Lit. I-II	MUS 1-2	4
Basic Conducting I-II	MUS 7-8	4
Band or Chorale	MUS 20 or 30	4
Piano	MUS 40, 41 or 42	3
Applied Study (Major)	MUS 42	4
Voice	MUS 38 or 39	2
		37
General Education Requirements		
Humanities I-II	HUM 10-11	8
Writing I-II	COM 1-2	6
Intro. to Speech	SPE 2	3
Behavioral or Social Sciences	ANT 1, PSY 20 or SOC 30	3
Sciences (Two semesters of any one or two courses)	LSC 7, 8, CHM 5, 6 PHY 2, 3, AST 1, 2, or ESC 20, 21	8
		65



Bilingual

BILINGUAL — BILINGUE

The college offers a variety of subjects 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 literary, vocational, professional and cultural purposes.

Some 20 courses are being offered under the Bilingual program in areas of art, drama, business, home economics, physical education, humanities, history, English as a Second Language (ESL), reading, literature and Spanish. The courses are listed in the individual program sections of the catalog. Courses in the Bilingual program 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 100 level as it is assumed that if a student can pursue a bilingual course taught totally in Spanish, he has knowledge of the language. The student may, therefore, obtain from 2 to 8 units additional Spanish credit. The actual number of units will be determined by the instructor teaching the course in cooperation with a Spanish instructor.

Credits are divided as follows: 2 credits each for 101a and 101b. Credits for 101a and 101b may be considered separately or together, totaling 2 or 4 units respectively. The same applies to 102a and 102b.

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 and Spanish 102 had been earned previously through enrollment in these classes.

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

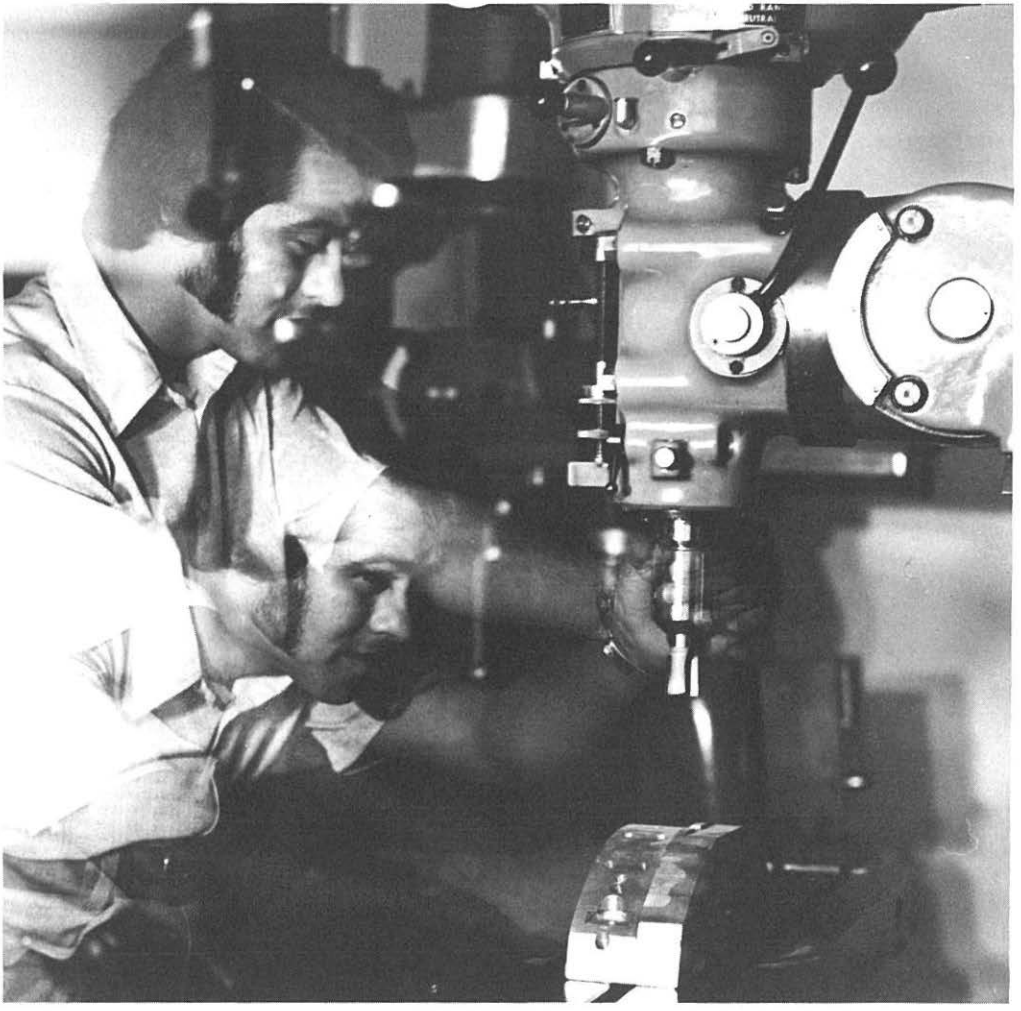
Unos 20 (veinte) cursos se ofrecen en el programa Bilingüe, tales como arte, drama, negocio, economia doméstica, educacion fisica, humanidades, historia, inglés como idioma extranjero, lectura, literatura y español. Los cursos se encuentran en el catalogo bajo las secciones de programas respectivos.

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 la ventaja de obtener crédito adicional en español en estos cursos.

El crédito en español es otorgado al nivel 100, pues se considera que si el estudiante puede cursar una materia del programa Bilingüe impartida en español en su totalidad, este estudiante ya tiene conocimiento de dicho idioma. Por consiguiente, este estudiante puede obtener de 2 a 8 unidades de crédito adicional en español. El número exacto será determinado por el instructor del curso en colaboración con un instructor de español.

Las unidades se dividen asi: dos (2) para el curso 101a y dos (2) para 101b. Las unidades de los cursos 101a y 101b pueden ser consideradas separadas o conjuntamente para un total de 2 o 4 unidades respectivamente. Este mismo concepto se aplicará a materias 102a y 102b.

Si el curso Bilingüe consiste de una unidad de crédito, el crédito en español sera una unidad elegible.
Este crédito adicional no se otorgará si crédito se ha recibido anteriormente en español 101 y 102 por medio de inscripción en estos cursos.



Business and Management

ACCOUNTING

The two-year degree program in Accounting trains persons to perform many diverse services in various types of employment. The general classifications of accounting employment are private accounting, public accounting and governmental accounting. Most firms and governmental units have a need for accounting skills.

Students planning to become Certified Public Accountants should follow the Business Administration Transfer program.

Associate of Science Degree For Direct Employment

Required Courses		Units
Prin. of Accounting I-II	ACC 1-2	6
Inter. Accounting I-II	ACC 54-55	6
Cost Accounting	ACC 56	3
Business Org. and Mgmt.	MAN 55	3
Business Law	BUS 10	3
Tax Accounting	ACC 57	3
		24
General Education Requirements		
Intro. to Computers	CSC 47	3
Writing I	COM 1	3
Microeconomics	ECO 2	3
Programming	CSC 60	3
Macroeconomics	ECO 3	3
Systems Anal. and Design I	CSC 80	3
Electives		6
Select four of the following: (for 12 units)		12
Business Math or Algebra	BUS 51 or MTH 20	(3)
Systems Anal. and Design II	CSC 81	(3)
Typing I or II	OED 11 or 12	(3)
Human Relations	MAN 58	(3)
Calculating Machines	OED 21	(2)
Supervision	MAN 54	(3)
		60

BUSINESS ADMINISTRATION TRANSFER

Courses offered at Pima Community College include those normally required for the first two years of a four-year curriculum in Business Administration, although some minor differences do exist.

Regardless of whether a student plans to major in accounting, advertising, economics, finance or some other area of Business Administration at a four-year institution, the work of the first two years is essentially the same.

All business programs accredited by the American Association of Collegiate Schools of Business require students to take a minimum of 40 per cent of their four years' work in the arts and sciences including mathematics, social or behavioral 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, during their first two years at a community college, should take only those courses in business that are offered on the freshman or sophomore level at any of the three Arizona universities. Professional business courses taught on the junior and senior levels at the three state universities may not be completed for transfer credit at any community college. Those taught as terminal, vocational or career courses at a community college, although similar to professional courses offered at the junior and senior levels at the three universities will not be accepted for credit toward a bachelor's degree. An exception to this policy is a one-semester business law course.

The maximum in business and economic courses accepted from community colleges toward a bachelor's degree in business administration is 30 hours.

The following general pattern of courses is recommended for students completing their first two years at Pima and who plan to transfer to a four-year institution without loss of credit:

For Transfer

Suggested Courses	Units
Accounting	6
Economics	6
Statistics	3
Business Electives (lower division)	9
	24
General Education Recommendations	
(For 40 units)	
English	
Mathematics	
Science	
Humanities	
Behavioral or Social Sciences	
Physical Education	
	40
	64

Note: This is only a representative program. Students should always consult their adviser and the catalog of the college or university to which they plan to transfer for specific requirements.

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 Science degree.

Certificates and diplomas are awarded upon completion of the shorter programs, indicating that the student is qualified as a computer operator, a key-punch 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 Science degree in Computer Science and have at least two years of programming experience.

Key Punch Operator
One-Semester Certificate Program
For Direct Employment

Required Courses		Units
Key Punch	CSC 52	3
Intro. to Business	BUS 50	3
Writing I	COM 1	3
Basic Reading Improv.	REA 60 series	4
Business Math or	BUS 51	3
Inter. Algebra	MTH 11	
Data Processing Proj. I	CSC 68	1
		17

Key Punch Operator
Two-Semester Diploma Program
For Direct Employment

Required Courses		Units
(One-Semester Certificate)		17
Advanced Key Punch	CSC 53	3
Survey of Data Proc. or	CSC 50	3
Intro. to Computers	CSC 47	
Human Relations	MAN 58	3
Calculating Machines	OED 21	2
Reading Improvement	REA 60 series	4
Cooperative Training or	CSC 199	3
Elective		
		35

Note: Students completing the Key Punch Operator Diploma Program may qualify for the Data Control Technician Diploma by adding Accounting I, II (ACC 1, 2) and Introduction to Computers (CSC 47) to their course of study.

Data Control Technician
Two-Semester Diploma Program
For Direct Employment

Required Courses			Units
Intro. to Computers	CSC	47	3
Prin. of Accounting I-II	ACC	1-2	6
Business Math or	BUS	51	3
Inter. Algebra	MTH	11	
Reading Improvement	REA	60 series	8
Human Relations	MAN	58	3
Writing I	COM	1	3
Calculating Machines	OED	21	2
Data Processing Proj. I	CSC	68	1
Select two of the following:			6
Beginning Typing	OED	11	(3)
Intro. to Business	BUS	50	(3)
Key Punch	CSC	52	(3)
Advanced Key Punch	CSC	53	(3)
Cooperative Training	CSC	199	(3)
			35

Note: Students completing the Data Control Technician Diploma program may qualify for the Computer Operator Diploma by adding Computer Operations (CSC 56), Job Stream (CSC 58), Intermediate Algebra (MTH 11), Introduction to Business (BUS 50) and a Computer Science elective.

Computer Operator
Two-Semester Diploma Program
For Direct Employment

Required Courses			Units
Intro. to Computers	CSC	47	3
Computer Operations	CSC	56	3
Job Stream	CSC	58	3
Inter. Algebra	MTH	11	3
Intro. to Business	BUS	50	3
Data Processing Proj. I	CSC	68	1
Reading Improvement	REA	60 series	8
Prin. of Accounting I	ACC	1	3
Writing I	COM	1	3
Select one of the following:			3
Human Relations	MAN	58	(3)
Cooperative Training	CSC	199	(3)
Computer Science Elective			(3)
			33

Computer Programmer/Analyst
Associate of Science Degree
For Direct Employment

Required Courses				Units
Intro. to Computers	CSC	47		3
COBOL Programming	CSC	60		3
Assembly Language Prog.	CSC	70		3
Systems Analysis I-II	CSC	80-81		6
File Mgmt. and IOCS	CSC	74		4
				19
General Education Requirements				
Prin. of Accounting I-II	ACC	1-2		6
Writing I-II	COM	1-2		6
Inter. Algebra	MTH	11		3
College Algebra or	MTH	20		3–5
Pre-Calculus Math	MTH	29		
Microeconomics	ECO	2		3
Macroeconomics	ECO	3		3
Reading Improvement	REA	60 series		8
Select three groups from the following:				
Cost Accounting	ACC	56	(3)	
Data Processing Proj. II	CSC	98	(3)	
(Cooperative Training	CSC	199 or 299	(6)	
Stat. Methods in Economics and Business	BUS	5-6	(6)	
Finite Math	MTH	25	(3)	
Topics in Calculus	MTH	26	(3)	
(Anal. Geometry-Calculus	MTH	30-31	(10)	
(Philosophy or Science			(3–4)	
(Advanced Prog. Concepts	CSC	62	(3)	
				65–68

Note: Students who wish to receive the Computer Operator Diploma in addition to the Associate of Science Degree should add Computer Operations (CSC 56) and Job Stream (CSC 58) to their course of study.

Computer Systems Programmer
One-Year Diploma Program
Continuing Education

Required Courses			Units
FORTRAN IV	CSC	40	3
Operating Systems	CSC	76	3
Systems Prog. Theory	CSC	90	3
Teleprocessing Concepts	CSC	94	3
Adv. Computer Science or	CSC	43	3
Adv. Prog. Concepts	CSC	62	
Data Processing Proj. II	CSC	98	3
Anal. Geometry-Calculus	MTH	30-31	10
			28

Note: An Associate degree and two years experience as a programmer are required to enter this program.

FINANCE

This program was designed in affiliation with various Tucson financial institutions and their educational institutes. It is flexible as to allow for a variety of specialties within the finance industry.

Banking Option
Associate of Science Degree
For Direct Employment

Required Courses				Units
Prin. of Accounting I-II	ACC	1-2		6
Business Law I	BUS	10		3
Human Relations	MAN	58		3
Supervision	MAN	54		3
Prin. Bank Operations	BUS	69		3
Money and Banking	BUS	72		3
Bank Management	BUS	62		3
Select four of the following: (for 12 units)				12
Business Finance	BUS	58	(3)	
Financial Statements	BUS	52	(3)	
Installment Credit	BUS	53	(3)	
Bank Investments	BUS	61	(3)	
Credit Administration	BUS	68	(3)	
Trust Dept. Organ.	BUS	70	(3)	
Home Mortgage Lending	BUS	74	(3)	
Fund. Bank Data Proc.	BUS	77	(3)	
				36
General Education Requirements				
Writing I	COM	1		3
Microeconomics	ECO	2		3
Macroeconomics	ECO	3		3
Electives				15
				60

Savings and Loan Association Option
Associate of Science Degree
For Direct Employment

Required Courses			Units
Prin. of Accounting I-II	ACC	1-2	6
Human Relations	MAN	58	3
Supervision	MAN	54	3
Savings & Loan Bus. Oper.	BUS	79	3
Financial Institutions	BUS	80	3
Real Estate Principles	MAN	65	4
Real Estate Law	MAN	67	3
Ins. of Savings Accounts	BUS	81	3
Home Mortgage Lending	BUS	74	3
Anal. Financial Statements	BUS	52	3
Real Estate Appraisal	MAN	68	3
Insurance	BUS	82	3
Installment Credit	BUS	53	3
			42
General Education Requirements			
Writing I	COM	1	3
Microeconomics	ECO	2	3
Macroeconomics	ECO	3	3
Electives			9
			60

LIBRARY TECHNICIAN

Students in the Library Technician program are prepared to work in para-professional positions needed in library facilities. Graduates of the two-year degree program can find employment opportunities in school and public libraries and in business library facilities. A certificate program also is offered.

One-Year Certificate Program For Direct Employment

Required Courses			Units
Media Terminology	MET	80	1
Instructional Media Tech. I	MET	81	3
Intermediate Typing	OED	12	3
Key Punch	SCS	52	3
Library Resources	LMT	50	3
Library Tech. Services	LMT	51	4
Library Public Services	LMT	52	3
Word Processing	OED	22	4
Implications Media Tech.	MET	84	3
			27

Associate of Arts Degree For Direct Employment

Required Courses			Units
Media Terminology	MET	80	1
Instructional Media Tech. I	MET	81	3
Library Resources	LMT	50	3
Library Tech. Services	LMT	51	4
Library Public Services	LMT	52	3
Cooperative Training	LMT	299	6
Implications Media Tech.	MET	84	3
			23
General Education Requirements			
Writing I-II	COM	1-2	6
Intermediate Typing	OED	12	3
Key Punch	CSC	52	3
Intro. to Computers	CSC	47	3
Word Processing	OED	22	4
Office Procedures	OED	57	3
Humanities			6
Behavioral or Social Sciences			3
Ethnic Studies			3
Sciences			4
Elective			3
			64

MID-MANAGEMENT

Mid-Management, an area of Distributive Education, is an occupation-oriented training program for students who plan to qualify for junior executive positions in the marketing field.

Options also are available allowing the student to pursue a variety of areas of interest including Real Estate and Advertising. Students specializing in Fashion Merchandising work in both the Home Economics and Mid-Management areas.

The two-year Real Estate program is aimed at both training persons new to the field and upgrading those already in it.

Program courses prepare students for careers as salesmen and brokers and in allied fields including governmental agencies and financial institutions.

Mid-Management Associate of Science Degree For Direct Employment

Required Courses			Units
Prin. of Accounting I-II	ACC	1-2	6
Business Law I	BUS	10	3
Human Relations	MAN	58	3
Supervision	MAN	54	3
Marketing	MAN	59	3
Salesmanship	MAN	50	3
Business Organ. & Mgmt.	MAN	55	3
Business Math	BUS	51	3
Select four of the following: (for 12 units)			12
Retailing	MAN	51	(3)
Small Business Mgmt.	MAN	52	(3)
Advertising Principles	MAN	53	(3)
Advertising Layout	MAN	56	(3)
Real Estate Principles	MAN	65	(4)
Survey of Data Proc.	CSC	50	(3)
Consumer Behavior	MAN	62	(3)
			39
General Education Requirements			
Writing I	COM	1	3
Business English	OED	54	3
Microeconomics	ECO	2	3
Electives			15
			63

Note: It is suggested that students select the 15 elective units from Behavioral or Social Sciences, History, Political Science, Math or additional Business and Management courses.

Real Estate
Associate of Science Degree
For Direct Employment

Required Courses			Units
Salesmanship	MAN	50	3
Real Estate Principles	MAN	65	4
Prin. of Accounting I	ACC	1	3
Real Estate Practices	MAN	66	4
Real Estate Law	MAN	67	3
Home Mortgage Lending	BUS	74	3
Real Estate Appraisal	MAN	68	3
Real Estate Practicum	MAN	69	3
			26

General Education Requirements			
Business English	OED	54	3
Business Law I-II	BUS	10, 60	6
Business Math	BUS	51	3
Microeconomics	ECO	2	3
Business and Prof. Comm.	SPE	20	3
Contemporary Economics	ECO	4	3
Business Communications	BUS	59	3
Select four of the following electives: (for 11 units)			11
Intro. to Cities & Comm.	SOC	59	(3)
Intro. to Civil Rights	SOC	32	(3)
Financial Statements	BUS	52	(3)
Construction Drafting I	DFT	61	(3)
Human Relations	MAN	58	(3)
Prin. of Advertising	MAN	53	(3)
Prin. of Accounting II	ACC	2	(3)
Tax Accounting	ACC	57	(3)
Intro. to Computers	CSC	47	(3)
			61

OFFICE OCCUPATIONS

A wide variety of courses are available in the secretarial and clerical fields. Two-year programs, leading to an Associate of Science degree, are available in the areas of general secretary, legal secretary, medical secretary, executive secretary and administrative assistant.

One-year programs include clerk-typist, receptionist and service representative.

A cooperative work experience program, in which students receive practical office training, is available for qualified second-year students.

For complete information on program course requirements and sequencing, consult an office education adviser.

Clerk-Typist
One-Year Diploma Program
For Direct Employment

Required Courses			Units
Typewriting II-III	OED	12, 52	6
Business Math	BUS	51	3
Prin. of Accounting I	ACC	1	3
Business English	OED	54	3
Human Relations	MAN	58	3
Calculating Machines	OED	21	2
Word Processing	OED	22	4
Office Procedures	OED	57	3
Business Communications	BUS	59	3
Records Management	OED	3	2
			32

Receptionist
(General, Legal, Medical)
One-Year Diploma Program
For Direct Employment

Required Courses			
Business English	OED	54	3
Typewriting II	OED	12	3
Business Math	BUS	51	3
Office Procedures	OED	57	3
Records Management	OED	3	2
Prin. of Accounting or Business Comm.	ACC BUS	1 59	3
Word Processing	OED	22	4
Calculating Machines	OED	21	2
Human Relations	MAN	58	3
Electives			
Recommended Electives:			6
Medical Terminology for medical receptionist	OED	55	(3)
Legal Sec. Procedures I for legal receptionist	OED	50	(3)
			32

Service Representative
One-Year Diploma Program
For Direct Employment

Required Courses			Units
Typewriting II-III	OED	12, 52	6
Business Math	BUS	51	3
Prin. of Accounting I	ACC	1	3
Business English	OED	54	3
Salesmanship	MAN	50	3
Records Management	OED	3	2
Calculating Machines	OED	21	2
Word Processing	OED	22	4
Office Procedure	OED	57	3
Human Relations	MAN	58	3
			32

Administrative Assistant
Associate of Science Degree
For Direct Employment

Required Courses			Units
Business English	OED	54	3
Typewriting II-III	OED	12, 52	6
Word Processing	OED	22	4
Office Procedures	OED	57	3
Supervision	MAN	54	3
Business Communications	BUS	59	3
Calculating Machines	OED	21	2
Human Relations	MAN	58	3
Prin. of Accounting I-II	ACC	1-2	6
Records Management	OED	3	2
Business & Prof. Comm.	SPE	20	3
Business Organ. & Mgmt.	MAN	55	3
Business Math	BUS	51	3
Reading Improvement	REA	60 series	4
Intro. to Computers	CSC	47	3
Business Law I-II	BUS	10, 60	6
Electives			4-6
			61-63

Executive Secretary
Associate of Science Degree
For Direct Employment

Required Courses			Units
Business English	OED	54	3
Shorthand II-III	OED	2. 53	6
Typewriting II-III	OED	12, 52	6
Office Procedures	OED	57	3
Business Math	BUS	51	3
Calculating Machines	OED	21	2
Human Relations	MAN	58	3
Word Processing	OED	22	4
Business Law I	BUS	10	3
Prin. of Accounting I	ACC	1	3
Intro. to Computers or	CSC	47	3
Intro. to Business	BUS	50	
Transcription or	OED	64	3
Prin. of Accounting II	ACC	2	
Business Communications	BUS	59	3
Records Management	OED	3	2
Electives			13
Recommended Electives:			
Prin. of Accounting II	ACC	2	(3)
Business Law	BUS	60	(3)
Business & Prof. Comm.	SPE	20	(3)
Reading Improvement	REA	60 series	(4)
Intro. to Computers	CSC	47	(3)
Costume Selection	HEC	35	(3)
			60

General Secretary
Associate of Science Degree
For Direct Employment

Required Courses			Units
Business English	OED	54	3
Shorthand I-III	OED	1, 2, 53	9
Typewriting I-III	OED	11, 12, 52	9
Business Math	BUS	51	3
Calculating Machines	OED	21	2
Office Procedures	OED	57	3
Word Processing	OED	22	4
Records Management	OED	3	2
Prin. of Accounting I	ACC	1	3
Intro. to Computers or	CSC	47	3
Intro. to Business	BUS	50	
Human Relations	MAN	58	3
Business Law I	BUS	10	3
Transcription	OED	64	3
Business Communications	BUS	59	3
Electives			7-10
Recommended Electives:			
Prin. of Accounting II	ACC	2	(3)
Business Law II	BUS	60	(3)
Business & Prof. Comm.	SPE	20	(3)
Reading Improvement	REA	60 series	(4)
Intro. to Computers	CSC	47	(3)
Costume Selection	HEC	35	(3)
			60-63

Legal Secretary
Associate of Science Degree
For Direct Employment

Required Courses			Units
Business English	OED	54	3
Shorthand II-III	OED	2, 53	6
Typewriting II-III	OED	12, 52	6
Business Law I-II	BUS	10, 60	6
Business Math	BUS	51	3
Word Processing	OED	22	4
Calculating Machines	OED	21	2
Legal Secretarial Proc. I-II	OED	50-51	6
Prin. of Accounting I	ACC	1	3
Records Management	OED	3	2
Human Relations	MAN	58	3
Business Communications	BUS	59	3
Transcription	OED	64	3
Electives			10
Recommended Electives:			
Prin. of Accounting II	ACC	2	(3)
Business & Prof. Comm.	SPE	20	(3)
Reading Improvement	REA	60 series	(4)
Intro. to Computers	CSC	47	(3)
Costume Selection	HEC	35	(3)
			60

Medical Secretary
Associate of Science Degree
For Direct Employment

Required Courses			Units
Shorthand II-III	OED	2, 53	6
Typewriting II-Iii	OED	12, 52	6
Business English	OED	54	3
Prin. of Accounting I	ACC	1	3
Business Math	BUS	51	3
Calculating Machines	OED	21	2
Word Processing	OED	22	4
Office Procedures	OED	57	3
Records Management	OED	3	2
Business Law I	BUS	10	3
Medical Terms	OED	55	3
Human Relations	MAN	58	3
Medical Transcription	OED	56	3
Business Communications	BUS	59	3
Electives			13-16
Recommended Electives:			
Prin. of Accounting II	ACC	2	(3)
Business Law II	BUS	60	(3)
Business & Prof. Comm.	SPE	20	(3)
Reading Improvement	REA	60 series	(4)
Intro. to Computers	CSC	47	(3)
Costume Selection	HEC	35	(3)
			60-63

Education

EDUCATION

Persons planning to enter the field of Education can fulfill their first two years of study requirements at Pima Community College. Students, however, should follow the first two-year requirements of the college or university to which they plan to transfer.

Secondary Education
For Transfer to Arizona Universities

General Education Requirements	Units
Communications	6
Humanities	8
Math or Science	8
Behavioral or Social Sciences (Including either ANT 1, PSY 20 or SOC 30)	9
Electives	29
	60

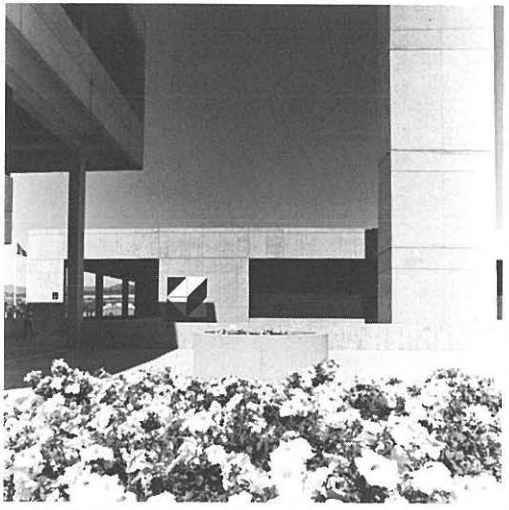
Note:
(1) If a student transfers before his junior year, he will be required to take a language and physical education until he is admitted to the College of Education. If he has not had algebra and geometry in high school, he may be required to do so.
(2) If a student wishes, he may take American National Government (POL 10) and American State and Local Government (POL 11) as electives before transfer to fulfill the state certification requirement for secondary education teachers.

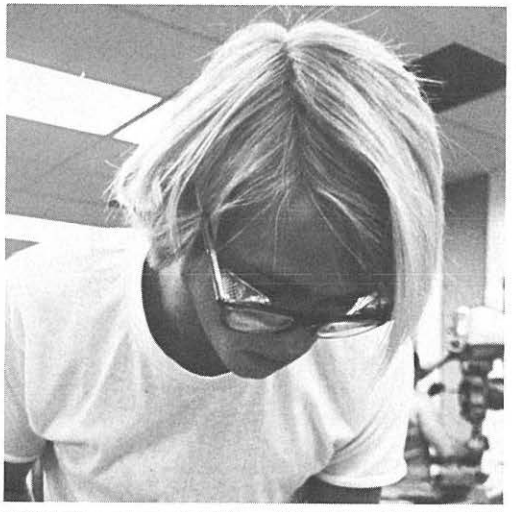
Elementary or Special Education
For Transfer to Arizona Universities

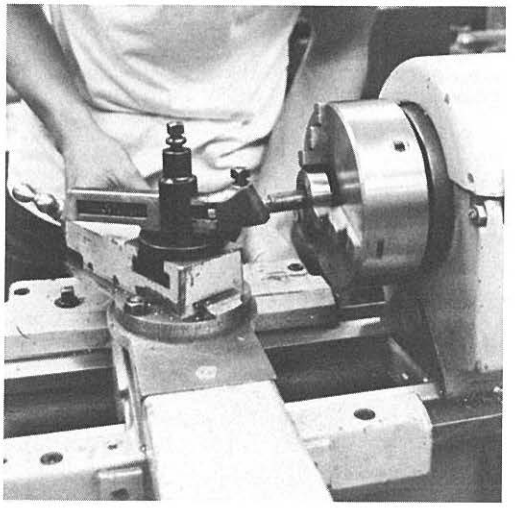
Suggested Courses			Units
Biology for Ed. Majors	LSC	12	4
Chemistry for Ed. Majors	CHM	12	3
Geology for Ed. Majors	ESC	12	3
Physics for Ed. Majors	PHY	12	3
Child Development	HEC	17	3
Intro. Health Science	HED	36	3
Basic Concepts in Math	MTH	12-13	6
			25

General Education Requirements	
Humanities	8
Communications	6
Behavioral or Social Sciences (Including two of the following: ANT 1, ESC 2, PSY 20, SOC 30)	12
Electives	10
	61

Note:
(1) If a student transfers before his junior year, he will be required to take physical education. If he has not had algebra and geometry in high school, he may be required to do so.
(2) If a student wishes, he may take American National Government (POL 10) and American State and Local Government (POL 11) as electives before transfer to fulfill the state certification requirements for elementary or special education majors.







Engineering

ENGINEERING

Students completing the two-year program should be able to transfer to a four-year college or university for further studies in Engineering. Before entering the program, each individual should consult the catalog of the institution to which he plans to transfer to make certain what courses are required there. Similar planning is necessary to qualify for specialist degrees in civil engineering, electrical engineering and other areas within the general field.

For Transfer To Arizona Universities

Suggested Courses			Units
General Chemistry	CHM	3-4	8
Writing I-II	COM	1-2	6
Eng. Mechanics	ENG	14	3
Anal. Geometry/Calculus	MTH	30-31	10
Differential Equations	MTH	36	4
Intro. Mechanics	PHY	10	4
Elec. & Magnetism	PHY	16	4
Intro. Waves & Heat	PHY	21	3
			42

Note: All Engineering majors need 8 units of Behavioral or Social Sciences or Humanities.

All Engineering majors except Chemical need CSC 40.
All Engineering majors except Industrial, Electrical and Systems need ENG 17.

Civil, Mining and Geological Engineering majors need ESC 20 and ENG 21.

Mechanical, Aerospace, Agricultural, Civil, Geological, Mining and Metallurgical Engineering majors need ENG 2.

General Studies/Exploratory

GENERAL STUDIES / EXPLORATORY

Exploratory programs, meeting individual interests, may be arranged through conferences with Exploratory faculty members or members of the Student Development Faculty.

PROGRAMA DE EXPLORACIÓN

Estudiantes que quieran cursos de diversos programas pueden inscribirse en el Programa Exploratorio. Para esto, es necesario hablar con algun profesor del Programa Exploratorio ó con algun profesor de Student Development Faculty.

HealthSciences

DENTAL ASSISTING TECHNOLOGY

Students in this two-semester program are trained to work as dental assistants for private dentists, in government hospitals, public health departments, private clinics or in the Armed Forces.

In addition to campus classes, a portion of studies consists of externship practicum in an approved affiliated dentist's office.

Graduates of the program, which provides both theoretical and practical preparation in dental assisting, will qualify for a diploma from Pima Community College and for examination by the certifying board of the American Dental Assistants Association.

Pre-entrance requirements include a high school diploma or equivalency certificate, occupational dexterity examinations and an evaluation by the program coordinator.

Two-Semester Diploma Program For Direct Employment

Required Courses			Units
Intro. to Dental Assist.	DAT	61	3
Dental Assist. I-III	DAT	62, 66, 67	10
Oral Radiography	DAT	63	3
Dental Materials	DAT	64	3
Clinical Procedures I-II	DAT	65, 68	9
Writing I-II	COM	1-2	6
			34

EMERGENCY MEDICAL TECHNOLOGY

This certificate program, which currently consists of one course but is expected to be expanded in the future, prepares students to work as emergency medical technicians in hospitals and for civil or private agencies such as ambulance firms.

Graduates of this program will receive state certification and can apply for certification with the National Registry for Emergency Medical Technicians.

A high school diploma or equivalency certificate is required to enter the program. High school subjects helpful in preparing the student for the program are biology and first aid.

HEALTH SCIENCES

Eleven Health Science programs are available at Pima Community College.

These are Dental Assisting Technology, Dental Laboratory Technology, Emergency Medical Technology, Nursing Assistant, Practical Nursing, Nursing (R.N.), Operating Room Technology, Optical Laboratory Technology, Ophthalmic (Optical) Dispensing Technology, Radiologic (X-Ray) Technology and Respiratory Therapy. Students interested in entering any of the Health Science programs must confer with the respective program adviser in arranging their studies.

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.

General requirements for all programs include testing for reading and mathematics ability, completion of the Health Science application, a physical examination and a personal interview.

Students enrolling for the Nursing Assistant certificate should have a minimum of eighth grade reading and mathematics ability.

Studies under the Practical Nursing diploma program cover two semesters and a summer session. Requirements for entering the program include a high school diploma or equivalency certificate, twelfth grade reading and mathematics ability. Students successfully completing the program will be eligible to take the Arizona Practical Nursing examination for licensure as an L.P.N.

Graduates of the Associate Degree Nursing program are prepared to give quality nursing care with some degree of independence under the supervision of an experienced professional nurse, and also to take the Arizona Registered Nurse licensing examination. Persons wishing to enroll in this program must have a high school diploma or equivalency certificate, thirteenth grade reading and mathematics ability, and chemistry within the past five years.

Nursing candidates planning to enter a baccalaureate program in nursing should follow the first two-year requirements of the university to which they plan to transfer.

Nursing Assistant
One-Semester Certificate Program
For Direct Employment

Required Courses			Units
Anatomy & Physiology	LSC	50	4
Intro. to Health Care	HCA	54	3
Nursing Assist.	NRS	50	5
Elective			3–4
(Select from REA 60, COM 50, COM 1, MTH 65, CHM 5)			
			15–16

Note: Upon completing the prerequisites for the practical or Associate degree nursing programs, students may take the two-semester nursing seminar (NRS 55) and receive credit for Nursing I (NRS 70) in those programs.

Practical Nurse
Three-Semester Diploma Program
For Direct Employment

Required Courses			Units
Intro. to Health Care	HCA	54	3
Anatomy & Physiology	LSC	50	4
Nursing I-II	NRS	70, 72	13
Infectious Diseases	LSC	17	2
Practical Nursing	NRS	75	10
Writing	COM	1 or 50	3
Psychology	PSY	20	3
Sociology	SOC	30	3
			41

Note: Upon completing the prerequisites (chemistry and 13th grade reading ability) and LSC 20-21, students are eligible to apply for admission to the third semester of the Associate degree program.

Nursing (R.N.)
Associate of Science Degree
For Direct Employment

Required Courses			Units
Anatomy & Physiology I-II	LSC	20-21	8
Intro. to Health Care	HCA	54	3
Nursing I-II	NRS	70, 72	13
Microbiology	LSC	7	4
A.D. Nursing III-IV	NRS	80, 82	20
			48
General Education Requirements			
Writing I-II	COM	1-2	6
Psychology	PSY	20	3
Sociology	SOC	30	3
Science Elective			3–4
Elective			4
			67–68

Nursing (Transfer)
For Transfer

Required Courses			Units
Intro. Chemistry I-II	CHM	5-6	8
Anatomy & Physiology I-II	LSC	20-21	8
Microbiology I-II	LSC	7-8	8
Human Dev.	HEC	7	3
Child Dev.	HEC	17	3
Genetics	LSC	10	4
			34
General Education Requirements			
Writing I-II	COM	1-2	6
Psychology I-II	PSY	20-21	6
Sociology	SOC	30-31	6
Humanities I-II	HUM	10-11	8
Speech	SPE	2	3
Anthropology	ANT	1	3
			66

Note: This pre-nursing curriculum meets the first two-year requirements for the baccalaureate degree in nursing at Arizona State University and the University of Arizona. General requirements for admission into the pre-nursing program include testing for reading and mathematic ability, completion of the Health Science application, a physical examination and a personal interview. The pre-nursing program of study includes general science and humanities courses selected to prepare the student for advanced professional course work.

OPERATING ROOM TECHNOLOGY

Graduates of this three-semester diploma program, which combines academic study with clinical experience, will be qualified for employment as hospital operating room technicians and eligible to apply for national certification by the Association of Operating Room Technicians. The certification is by examination.

Requirements to enter the program include a high school diploma or equivalency certificate; a certificate of health examination, including a chest x-ray; and a personal interview with the ORT adviser.

A background of high school biology and chemistry is strongly recommended, and algebra and physics are considered desirable. Students who have not had chemistry will be required to take Chemistry 5. Those with less than two years of previous college experience must take a pre-entrance reading and mathematics placement examination.

All Operating Room Technology courses must be taken at Pima Community College.

Three-Semester Diploma Program For Direct Employment

Required Courses			Units
Intro. to Health Care	HCA	54	3
Writing	COM	1 or 50	3
Anatomy & Physiology	LSC	50	4
Psychology	PSY	20	3
Basic Surgical Tech.	ORT	52	4
Surgical Biology	ORT	53	3
Surgical Procedures	ORT	54	3
Surgical Anatomy	ORT	55	4
Practicum	ORT	91	12
			39

Note: Courses ORT 52 through 55 must be taken concurrently.

OPHTHALMIC DISPENSING TECHNOLOGY

This two-year program, which leads to an Associate of Science degree, qualifies graduates for employment as ophthalmic dispensers and/or contact lens technicians in private offices and clinics. Other opportunities include private practice, optical laboratory managers, ophthalmic sales representatives and ophthalmic research technicians.

Students successfully completing the first two semesters of this Health Careers program can qualify as optical laboratory technicians.

Requirements for entering Ophthalmic Dispensing studies include a high school diploma or equivalency certificate; a pre-entrance examination, consisting of a series of general aptitude tests; an occupational dexterity examination; and an evaluation by program advisers. High school preparation in algebra, geometry and general business is helpful.

Theoretical and practical preparation are provided.

One-Year Diploma Program For Direct Employment

Required Courses			Units
Health Math	MTH	65	3
Optical Orient. I-II	ODT	51-52	9
Writing	COM	1, 50	6
Algebra	MTH	11 or 70	3
Physics	PHY	55	4
Optical Lab	ODT	53	3
Behavioral or Social Science Elective			3
			31

Note: This program is for direct employment as optical lab technician.

Associate of Science Degree For Direct Employment

Required Courses			Units
Health Math	MTH	65	3
Optical Orient. I-II	ODT	51-52	9
Optical Lab	ODT	53	3
Optical Dis. I-II	ODT	54, 58	12
Contact Lens	ODT	55	4
Optical Assistant	ODT	56	3
Contact Lenses	ODT	57	5
Senior Seminar	ODT	59	2
			41
General Education Requirements			
Writing	COM	1, 50	6
Algebra	MTH	11 or 70	3
Physics	PHY	55	4
Small Business Mgmt.	MAN	52	3
Behavioral or Social Science Elective			3
Elective (to be approved by coordinator)			3
			63

RADIOLOGIC (X-RAY) TECHNOLOGY

The total program consists of four semesters on campus and at least 2,200 hours of externship practicum in an affiliated hospital x-ray department. Qualified students will be selected to enter the hospital portion of their practicum beginning with the third semester of studies.

Graduates will qualify for an Associate of Science degree in Radiologic Technology and for application with the American Registry of Radiologic Technologists.

Pre-entrance examinations, evaluations and approval by program advisers are required for admission into the program, in addition to a high school diploma or equivalency certificate. High school subjects helpful in preparing the student for the pre-entrance examination are intermediate algebra, biology, physics and chemistry.

Credit requirements call for 102 semester hours of work with a minimum of 75 semester hours to be completed on campus.

Associate of Science Degree For Direct Employment

Required Courses			Units
Intro. to Health Care	HCA	54	3
Anatomy & Physiology I-II	LSC	20-21	8
Intro. to Radiography	RAD	71	3
Radiographic Chem. & Tech.	RAD	72	4
Positioning I-III	RAD	73, 81, 84	12
Rad. Physics	RAD	82	4
Clinical Procedures I-II	RAD	83, 86	6
Rad. Biology	RAD	87	3
Rad. Therapy	RAD	85	4
Practicum I-III	RAD	91-93	36
			83
General Education Requirements			
Writing I-II	COM	1-2	6
Inter. Algebra	MTH	11	3
Physics	PHY	55	4
Psychology	PSY	20	3
Elective (Typing recommended)			3
			102

RESPIRATORY THERAPY

Courses in the Respiratory Therapy program, which leads to an Associate of Science degree and qualification to take the American Registry of Inhalation Therapists (ARIT) accrediting examination, prepare the student to care for persons having heart and lung associated problems. Both emergency and supportive treatment techniques are taught.

Students, to enter the program, are required to have a high school diploma or equivalency certificate and take a pre-entrance examination. High school and post secondary transcripts, and a certificate of health examination must be submitted at the time of a required admission interview. High school chemistry, physics, algebra and geometry are highly desirable as preparation for admission to the program.

Completion of the required course work, plus 600 hours of clinical practice, normally necessitates summer work or an additional semester of study beyond the two academic years.

Associate of Science Degree For Direct Employment

Required Courses			Units
Intro. to Health Care	HCA	54	3
Anatomy & Physiology I-II	LSC	20-21	8
Health Math	MTH	65	3
Equip. & Procedures I-V	RTH	71, 80, 81, 87, 90	18
Clinical Medicine	RTH	73	2
Respiratory Physiology	RTH	82	5
Clinical Procedures * I-III	RTH	91-93	15
Diseases I-II	RTH	86, 89	10
			64
General Education Requirements			
Intro. to Chemistry I-II	CHM	5-6	8
Writing I-II	COM	1-2	6
Psychology	PSY	20	3
Supervision	MAN	54	3
			84

* Clinical procedures must be taken concurrently with the appropriate equipment and procedures course for a total minimum of 600 clock hours of clinical experience (practicum).

HomeEconomics

HOME ECONOMICS

The Home Economics area offers the student three opportunities:
Career preparation
Transfer to four-year institutions
Personal development for home and family living

Career or Occupational Programs

Career preparation sections are designed to give students an opportunity to prepare themselves for employment in:
Dietetic Technician and Nutrition Aide
Early Childhood Education
Fashion Design
Fashion Merchandising
Interior Design Technician
Professional Seamstress/Alteration Specialist
Teacher's Aide/Assistant

Transfer Programs

These programs are arranged primarily for transfer to Arizona universities and students should consult the catalog of the institution to which they plan to transfer. Programs also should be arranged with an adviser. Transfer programs offer study in five areas:
Child Development/Family Relations
Clothing, Textiles, Interior Design
Food and Nutrition
General Home Economics
Management and Economics

Personal Development for Home and Family Living

This program provides a general background in areas of food and nutrition, clothing, home management and child development with flexibility offered through electives selected by students.

Child Development

Child Development / Family Relations Associate of Arts Degree For Transfer

Required Courses			Units
Home Management	HEC	6	3
Child Dev. or	HEC	17	3
Human Dev.	HEC	7	
Home Furnishings	HEC	25	3
Nutrition	HEC	12	3
Home Ec. Profession	HEC	9	3
Nutrition/Growth/Dev.	HEC	42	3
Clothing Selection	HEC	35	3
Marriage/Family Rel.	HEC	27	3
			24
General Education Requirements			
Perception	ART	1	4
Writing I-II	COM	1-2	6
Humanities or	HUM	10-11	6
Anthropology	ANT	1-2	
Psychology	PSY	20	3
Chemistry * or	CHM	1-2	8
Biology	LSC	3-4	
Economics	ECO	2	3
Speech	SPE	2	3
Sociology	SOC	30	3
Electives			3
			63

* Recommended

Early Childhood Education One-Year Certificate Program For Direct Employment as Aide

Required Courses			Units
Child Dev.	HEC	17	3
Understanding Child	HEC	68	3
Nutrition	HEC	12	3
Math/Science	HEC	87	3
Community Resources	HEC	79	3
Pre-School Ed.	HEC	77	3
Language Arts	HEC	57	3
Music/Movement	HEC	58	3
Writing	COM	50	3
			27

Early Childhood Education Three-Semester Diploma Program For Direct Employment as Assistant

Required Courses			Units
(One-Year Certificate Program)			27
Food for Children	HEC	52	3
Play/Art	HEC	88	3
Home Management	HEC	6	3
Co-op Training	HEC	199	6
			42

Early Childhood Education
Associate of Arts Degree
For Direct Employment as Teacher

Required Courses			Units
(Three-Semester Diploma Program)			42
Co-op Training	HEC	299	6
Supervision/Admin.	HEC	78	3
Today's World	HEC	90	3
Small Business Mgmt.	MAN	52	3
Human Relations	MAN	58	3
Electives			3
			63

Early Childhood Education
Associate of Arts Degree
For Transfer

Required Courses			Units
Child Dev.	HEC	17	3
Home Ec. Profession	HEC	9	3
Clothing Selection	HEC	35	3
Nutrition	HEC	12	3
Home Management	HEC	6	3
			15
General Education Requirements			
Writing I-II	COM	1-2	6
Biology	LSC	12	4
Psychology	PSY	20	3
Math Concepts	MTH	12-13	6
Government	POL	10-11	6
Anthropology	ANT	1	3
Chemistry Concepts	CHM	12	3
Gen. Physics	PHY	12	3
Humanities I-II	HUM	10-11	8
Sociology	SOC	30	3
Perception	ART	1	4
Geology	ESC	12	3
Microeconomics	ECO	2	3
			70

Clothing / Fashion / Textiles

Apparel Design
Associate of Arts Degree
For Transfer

Required Courses			Units
Clothing Selection	HEC	35	3
Home Furnishings	HEC	25	3
Child Dev. or	HEC	17	3
Human Dev.	HEC	7	
Basic Clothing	HEC	5	3
Home Ec. Profession	HEC	9	3
Nutrition	HEC	12	3
Textiles	HEC	45	3
Home Management	HEC	6	3
Adv. Clothing	HEC	15	3
			27
General Education Requirements			
Perception	ART	1	4
Writing I-II	COM	1-2	6
History or	HIS	1-2	6–8
Humanities I-II	HUM	10-11	
Psychology	PSY	20	3
Chemistry * or	CHM	1-2	8
Biology	LSC	3-4	
Speech	SPE	2	3
Sociology	SOC	30	3
Electives			3–6
			63–68

* Recommended

Clothing / Textiles / Related Arts
Associate of Arts Degree
For Transfer

Required Courses			Units
Basic Clothing	HEC	5	3
Home Furnishings	HEC	25	3
Child Dev. or	HEC	17	3
Human Dev.	HEC	7	
Home Ec. Profession	HEC	9	3
Nutrition	HEC	12	3
Clothing Selection	HEC	35	3
Home Management	HEC	6	3
Textiles	HEC	45	3
Adv. Clothing	HEC	15	3
			27
General Education Requirements			
Perception	ART	1	4
Writing I-II	COM	1-2	6
History or	HIS	1-2	6–8
Humanities	HUM	10-11	
Psychology	PSY	20	3
Sociology	SOC	30	3
Chemistry * or	CHM	1-2	8
Biology	LSC	3-4	
Microeconomics	ECO	2	3
Speech	SPE	2	3
			63

* Recommended

Fashion Design
Associate of Arts Degree
For Direct Employment

Required Courses			Units
Basic Clothing	HEC	5	3
Alteration/Design	HEC	55	3
Dress Design	HEC	19	3
Dress Psychology	HEC	75	3
Clothing Selection	HEC	35	3
Textiles	HEC	45	3
Fashion Design I-II	HEC	85, 95	6
Co-op Training	HEC	199, 299	12
Retailing	MAN	51	3
Fashion History	HEC	84	3
Today's World	HEC	90	3
			45
General Education Requirements			
Perception	ART	1	4
Writing	COM	50	3
Human Relations	MAN	58	3
Advertising	MAN	53	3
Electives			6
			64

Note: Employment possibilities include self employment, designer's assistant, specialty store, custom sewing service.

Fashion Merchandising
Associate of Arts Degree
For Direct Employment

Required Courses			Units
Basic Clothing	HEC	5	3
Clothing Selection	HEC	35	3
Fashion History	HEC	84	3
Dress Psychology	HEC	75	3
Textiles	HEC	45	3
Fashion Design I	HEC	85	3
Retailing	MAN	51	3
Co-op Training	HEC	199, 299	12
Salesmanship	MAN	50	3
Advertising	MAN	53	3
Fashion Promotion *	HEC		3
Today's World	HEC	90	3
*	HEC		3
			48
General Education Requirements			
Perception or	ART	1	3–4
Painting	ART	21 sec.	
Writing	COM	50	3
Human Relations	MAN	58	3
Electives			9
			66–67

* Courses being developed.

Merchandising / Fashion Promotion
Associate of Arts Degree
For Transfer

Required Courses			Units
Basic Clothing	HEC	5	3
Child Dev. or	HEC	17	3
Human Dev.	HEC	7	
Home Furnishings	HEC	25	3
Home Ec. Profession	HEC	9	3
Clothing Selection	HEC	35	3
Nutrition	HEC	12	3
Home Management	HEC	6	3
Adv. Clothing	HEC	15	3
Textiles	HEC	45	3
			27
General Education Requirements			
Perception	ART	1	4
Writing I-II	COM	1-2	6
History or	HIS	1-2	6–8
Humanities	HUM	10-11	
Psychology	PSY	20	3
Sociology	SOC	30	3
Chemistry * or	CHM	1-2	8
Biology	LSC	3-4	
Microeconomics	ECO	2	3
Speech	SPE	2	3
			63–65

* Recommended

Professional Seamstress &/or Alteration Specialist
Associate of Arts Degree
For Direct Employment

Required Courses			Units
Basic Clothing	HEC	5	3
Alteration/Design	HEC	55	3
Dress Design	HEC	19	3
Dress Psychology	HEC	75	3
Adv. Clothing	HEC	15	3
Textiles	HEC	45	3
Co-op Training	HEC	199, 299	12
Tailoring	HEC	54	3
Clothing Selection	HEC	35	3
Today's World	HEC	90	3
			39
General Education Requirements			
Perception or	ART	1	3–4
Painting	ART	21 sec.	
Writing	COM	50	3
Human Relations	MAN	58	3
Small Business Mgmt.	MAN	52	3
Electives			9
			60–61

Note: Employment possibilities include self-employment, clothing establishments, dry cleaning establishments, custom sewing services, specialty stores.

Food and Nutrition

Associate of Science Degree programs for Dietetic Technician in Food Service Management, Dietetic Technician in Nutrition Care and Nutrition Aide are in the process of being developed and may be offered in the Fall of 1973.

Food / Human Nutrition / Dietetics
Associate of Science Degree
For Transfer

Required Courses			Units
Anatomy & Physiology	LSC	20-21	8
Gen. Chemistry	CHM	3-4	8
Home Management	HEC	6	3
Human Dev.	HEC	7 or 17	3
Organic Chemistry	CHM	40-41	8
Home Ec. Profession	HEC	9	3
Nutrition	HEC	12	3
Home Furnishings or	HEC	25	3
Clothing Selection	HEC	35	
Elective	HEC	32 suggested	3
			42
General Education Requirements			
Writing I-II	COM	1-2	6
Psychology	PSY	20	3
Humanities I-II	HUM	10-11	8
Sociology	SOC	30	3
Perception	ART	1	4
Microeconomics	ECO	2	3
Speech	SPE	2	3
Intro. Statistics	MTH	35	3
Tech. Communication	COM	4	3
			78

Food Service Management & Consumer Service in Food Associate of Science Degree For Transfer

Required Courses			Units
Foods I-II	HEC	2-3	6
Human Dev.	HEC	7	3
Organic Chemistry	CHM	40-41	8
Home Ec. Profession	HEC	9	3
Nutrition	HEC	12	3
Home Furnishings or	HEC	25	3
Clothing Selection	HEC	35	
Home Management	HEC	6	3
Meal Management	HEC	22	3
			32
General Education Requirements			
Writing I-II	COM	1-2	6
Intro. Chemistry I-II	CHM	1-2	8
Psychology	PSY	20	3
Humanities I-II	HUM	10-11	8
Speech	SPE	2	3
Sociology	SOC	30	3
Perception	ART	1	4
Microeconomics	ECO	2	3
Suggested Electives:			
Quantity Foods	HEC	32	(3)
Microbiology	LSC	7-8	(8)
Anatomy & Physiology	LSC	20-21	(8)
			70

General Home Economics

Home and Family Living for Personal Development Associate of Arts Degree

Required Courses			Units
Food Study I-II	HEC	2-3	6
Basic Clothing	HEC	5	3
Child Dev.	HEC	17	3
Adv. Clothing	HEC	15	3
Home Furnishings	HEC	25	3
Textiles	HEC	45	3
Marriage/Family Rel.	HEC	27	3
Human Dev.	HEC	7	3
Meal Management	HEC	22	3
Clothing Selection	HEC	35	3
Home Management	HEC	6	3
			36
General Education Requirements			
Psychology	PSY	20	3
Electives			21
			60

General Home Economics & Home Economics Education Associate of Arts Degree For Transfer

Required Courses			Units
Foods Study I II	HEC	2-3	6
Basic Clothing	HEC	5	3
Textiles	HEC	45	3
Child Dev. or	HEC	17	3
Human Dev.	HEC	7	
Nutrition	HEC	12	3
Home Ec. Profession	HEC	9	3
Adv. Clothing	HEC	15	3
Home Furnishings or	HEC	25	3
Clothing Selection	HEC	35	
Meal Management	HEC	22	3
Home Management	HEC	6	3
			33
General Education Requirements			
Perception	ART	1	4
Writing I-II	COM	1-2	6
Psychology	PSY	20	3
Humanities I	HUM	10	4
Sociology	SOC	30	3
Chemistry * or	CHM	1-2	8
Biology	LSC	3-4	
Microeconomics	ECO	2	3
Speech	SPE	2	3
			67

* Recommended

Interior Design

Interior Design Technician Associate of Arts Degree For Direct Employment

Required Courses				Units
Perception or	ART	1		3–4
Painting	ART	21 sec.		
Interior Design I-III	HEC	64, 74, 94		9
Home Furnishings	HEC	25		3
Textiles	HEC	45		3
Tech. Drafting I	DFT	55		3
Co-op Training	HEC	199 or 299		3–6
Today's World	HEC	90		3
				27–31
General Education Requirements				
Psychology	PSY	20		3
Writing	COM	50		3
Human Relations	MAN	58		3
Advertising	MAN	53		3
Small Business Mgmt.	MAN	52		3
Art Electives	ART			6
Electives				12
Suggested Electives:				
Functional Design	ART	12 or 22	(3)	
Construction Dftg. I	DFT	61	(3)	
				60–64

Note: Employment possibilities include self-employment, interior decorator's assistant, employment in home furnishings.

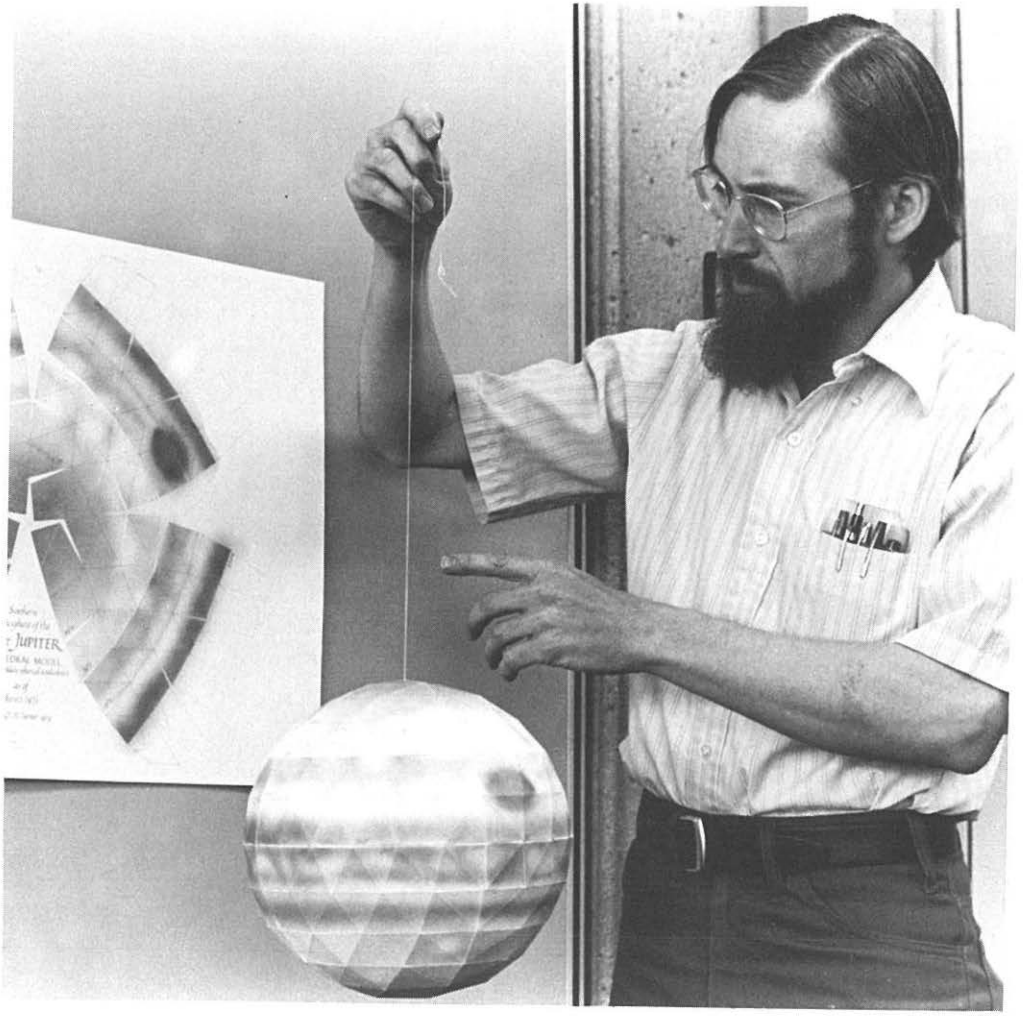
Interior Design
Associate of Arts Degree
For Transfer

Required Courses				Units
Clothing Selection	HEC	35		3
Home Furnishings	HEC	25		3
Child Dev. or	HEC	17		3
Human Dev.	HEC	7		
Home Ec. Profession	HEC	9		3
Nutrition	HEC	12		3
Home Management	HEC	6		3
Textiles	HEC	45		3
				21
General Education Requirements				
Perception	ART	1		4
Writing I-II	COM	1-2		6
History or	HIS	1-2		6–8
Humanities I-II	HUM	10-11		
Psychology	PSY	20		3
Sociology	SOC	30		3
Chemistry * or	CHM	1-2		8
Biology	LSC	3-4		
Microeconomics	ECO	2		3
Speech	SPE	2		3
Electives				6
Suggested Electives:				
Drawing	ART	21 sec.	(3)	
Graphics I	ART	10	(3)	
Ceramics	ART	9	(3)	
Prin. of Accounting I-II	ACC	1-2	(6)	
				63–65

* Recommended

Teacher's Assistant / Aide

Associate of Arts Degree programs for Teacher's Assistant/ Aide are in the process of being developed and may be offered in the Fall of 1973.


JUPITER

Journalism

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, which puts out the college newspaper "Community." 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			Units
Writing I-II	COM	1-2	6
Mass Media	JRN	10	3
Reporting	JRN	7-8	6
			15
General Education Requirements			
Humanities I-II	HUM	10-11	8
Foreign Language			16
Behavioral or Social Sciences			12
Science or Math			8
Elective			3
			62

LiberalArts and Sciences

LIBERAL ARTS AND SCIENCES

Included in the transfer program for Liberal Arts or Science majors are Behavioral or Social Sciences, Biology, Chemistry, Communicative Arts, Economics, Geography, Geology, History, Humanities, Languages, Literature, Mathematics, Philosophy, Political Science, Physics, Comparative Religions and Speech.

Requirements differ slightly in the various areas and students are urged to confer with a faculty member in their proposed major area to determine specific recommendations for that field. Students, after successful completion of the program, may be eligible to transfer to upper class levels at a four-year university.

The typical baccalaureate program in Liberal Arts should include 16 hours of foreign language (all of which may be taken at the community college level), six hours of writing, eight hours of humanities, 9-12 hours of behavioral or social science and eight hours of mathematics or science, plus electives.

The following suggested programs fulfill the requirements for the Associate degree in Liberal Arts or Sciences (transfer). Students, however, are urged to follow the requirements of the college or university to which they hope to transfer.

Biology
Associate of Science Degree
For Transfer

Suggested Courses			Units
General Chemistry I-II	CHM	3–4	8
Organismic Biology I-II	LSC	5–6	8
Organic Chemistry I-II	CHM	40–41	8
Genetics	LSC	10	4
			28
General Education Requirements			
Writing I-II	COM	1–2	6
Humanities I-II	HUM	10–11	8
Math	MTH	11 or 20, 24, 30, 31	3–5
Anal. Geometry/Calculus	MTH	30 or 31	5
Behavioral or Social Science Elective			3
Foreign Language			8
Electives			4–8
			65–71

Chemistry
Associate of Science Degree
For Transfer

Suggested Courses			Units
General Chemistry I-II	CHM	3-4	8
College Algebra	MTH	20	3
Physics *	PHY		8
Anal. Geometry/Calculus I-II	MTH	30-31	10
Organic Chemistry I-II	CHM	40-41	8
			37
General Education Requirements			
Writing I-II	COM	1-2	6
Electives **			21
			64

* Physics 2, 3 (without calculus) or 4, 5 (with calculus).

** Electives should include areas such as humanities, economics, psychology and history.

Note: This is a suggested course outline for students planning to transfer to a four-year institution to major in chemistry. More detailed information can be obtained from the chemistry faculty.

Geology
Associate of Science Degree
For Transfer

Suggested Courses			Units
Intro. to Geology I-II	ESC	20–21	8
Algebra	MTH	20	3
Trigonometry	MTH	24	3
Anal. Geometry/Calculus I-II	MTH	30–31	10
Engineering Graphics	ENG	2	3
Physics/Calculus I-II	PHY	4–5	8
General Chemistry I-II	CHM	3–4	8
Surveying	ENG	21	3
			46
General Education Recommendations			
Writing I-II	COM	1–2	6
Foreign Language			8
Humanities or Behavioral or Social Science Elective			9–11
			69–71

Note: This program is for students who have not taken advanced math in high school. Beginning high school math courses are recommended.

Geology
Associate of Science Degree
For Transfer

Suggested Courses			Units
Intro. to Geology I-II	ESC	20–21	8
General Chemistry I-II	CHM	3–4	8
Anal. Geometry & Calculus I-II	MTH	30–31	10
Physics/Calculus I-II	PHY	4–5	8
Engineering Graphics	ENG	2	3
Surveying	ENG	21	3
			40
General Education Recommendations			
Writing I-II	COM	1–2	6
Foreign Language			8
Humanities or Behavioral or Social Science Elective			7–10
			61–64

Note: Advanced math in high school is a prerequisite for this program.

Liberal Arts (General)
Associate of Arts Degree
For Transfer

Required Courses			Units
Writing I-II	COM	1–2	6
Humanities* I-II	HUM	10–11	8
Foreign Language			16
Major Subject			12
Math or Science**			6–8
Behavioral or Social Science***			6
Electives (transferable)			12
			66–68

*Or literature, philosophy, art, music.

**Math for B.S. science majors or 1 lab science.

***B.S. science majors need 9 hours.

Note: Use electives to start major or minor subjects. If major is not a behavioral or social science, one of the electives should be in behavioral or social science.

Mathematics
Associate of Arts Degree
For Transfer

Suggested Courses			Units
Science/Math			8–10
Major/Minor Electives			6–8
			14–18
General Education Recommendations			
Writing I-II	COM	1–2	6
Foreign Language*			16
Humanities or Communicative Arts Elective			8
Social or Behavioral Science Elective**			12
Physical Ed. Elective			4
			60–64

*French, German or Russian are acceptable. Students should check language requirements at the transfer institution of their choice.

**Requirements for B.S. degree normally are 9 sem. hrs. and for B.A. degree, 13 sem. hrs. in social or behavioral science. The credits should all be in one subject or 6 sem. hrs. in one area and 7 sem. hrs. in another for the B.A.; and 6 sem. hrs. in one area and 3 sem .hrs. in another for the B.S. A semester of history and psychology are recommended.

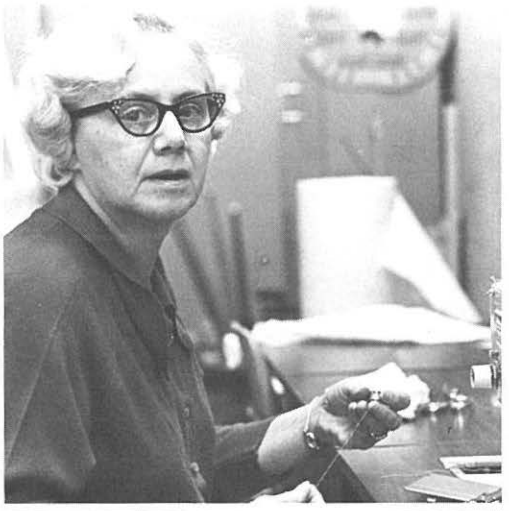
Note: 10 units of program must be in MTH 30–31.

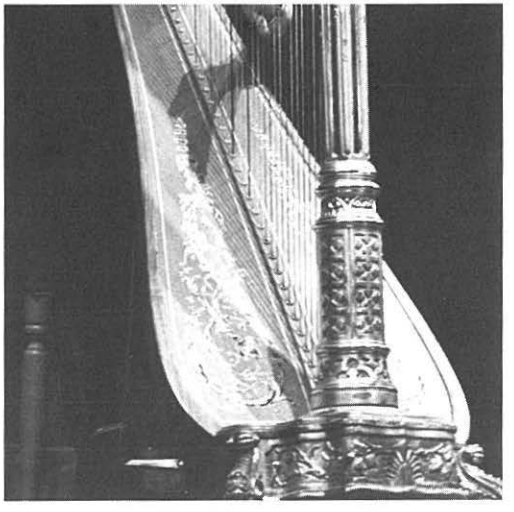
Physics
Associate of Science Degree
For Transfer

Suggested Courses			Units
Anal. Geology/Calculus I-II	MTH	30–31	10
Intro. Mechanics	PHY	10	4
Dif. Equations	MTH	36	4
Elec. & Magnetism	PHY	16	4
Waves & Heat	PHY	21	3
Modern Physics	PHY	30	3
Electronics	ETR		3
			31
General Education Recommendations			
Writing I-II	COM	1–2	6
Humanities I-II	HUM	10–11	8
Behavioral or Social Science Elective			3
Foreign Language			8–16
Physical Ed. Elective	PED		2
Elective (Can be used in place of 2 years language)			6
			64–66

Speech
Associate of Arts Degree
For Transfer

Required Courses			Units
Voice & Diction	SPE	5	2
Public Speaking	SPE	10	3
Beginning Forensics	SPE	24	1
Oral Interpretation	SPE	36	3
Speech Elective	SPE		3
			12
General Education Requirements			
Writing I-II	COM	1–2	6
Humanities I-II	HUM	10–11	8
Psychology	PSY	20	3
Sociology	SOC	30	3
Foreign Language			16
Sciences			8
Electives			10–12
			66–68





PhysicalEducation

PHYSICAL EDUCATION

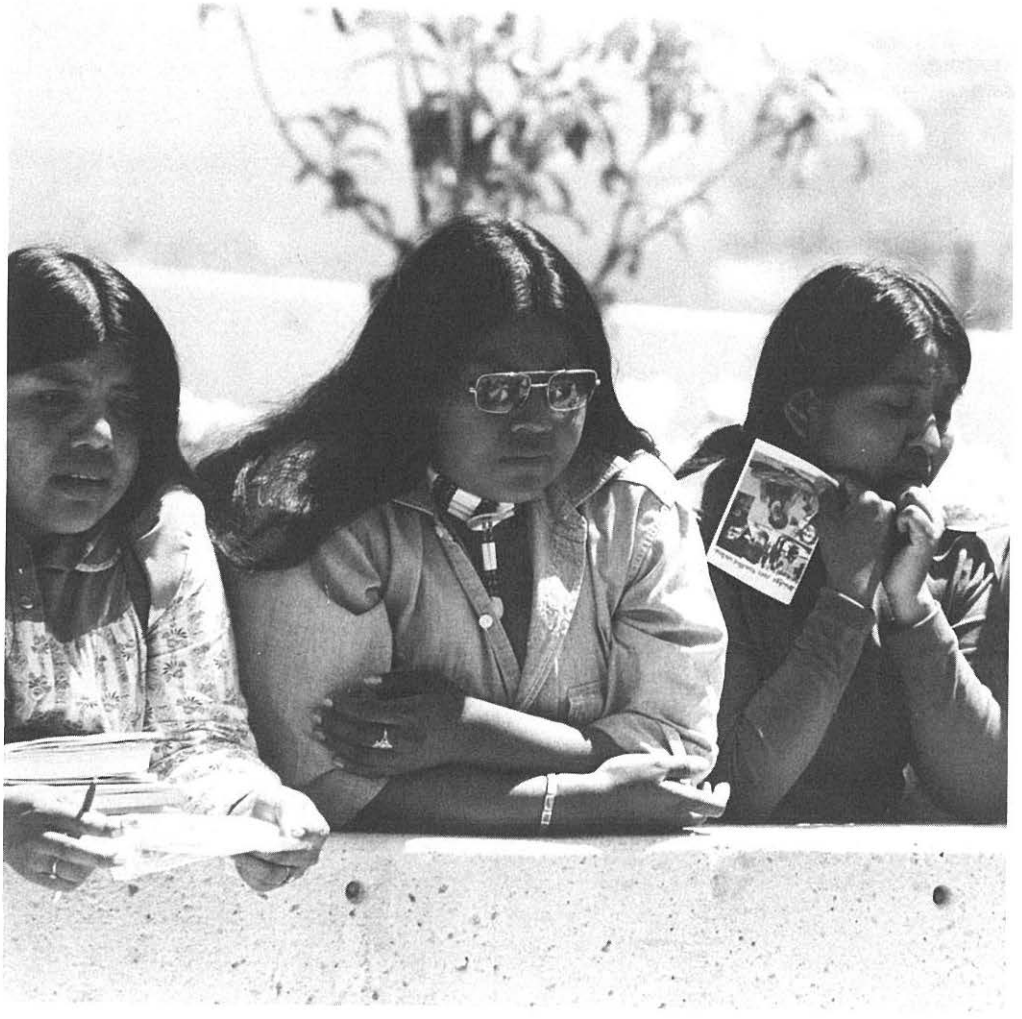
The Physical Education program is based on the philosophy of developing a leisure-time education for life with classes providing skill development. Options available under the Physical Education program are service activity classes; special interest classes; and teaching majors and minors.

Students planning to enroll in physical education courses should first consult with a faculty member for specific information. Requirements include providing the Student Health Service Office with a current, valid medical examination showing acceptable health standards and dated prior to enrollment; and obtaining health insurance which is available during registration.

Some courses may require a special fee or special dress to insure safety.

Associate of Arts Degree
For Personal Benefit or Transfer

Required Courses			Units
Intro. to Leisure Ed.	PED	39	3
Elem. School Phys. Ed.	PED	30	3
Professional Activities	PED	40–43	12
Practicum	PED	1–4	4
Phys. Ed. History	PED	49	2
Facilities	PED	20	2
			26
General Education Requirements			
Writing I-II	COM	1–2	6
Intermediate Algebra	MTH	11	3
Psychology	PSY	20	3
Humanities I-II	HUM	10–11	8
Anatomy & Physiology	LSC	20–21	8
National Government	POL	10	3
Electives (For a minimum of three units)			3
Suggested Electives:			
Sports Officiating	PED	45	(2)
Dance	PED	44	(2)
Athletic Training	PED	25	(2)
Co-op Training	PED	199, 299	(3–12)
Sociology	SOC	30	(3)
Human Biology	LSC	58	(4)
Health Education	HED	36, 37	(3–6)
Child Dev.	HEC	17	(3)
			60



Pre-Environmental

PRE-ENVIRONMENTAL DESIGN

This is a preparatory program leading to studies in architecture, urban design or landscape architecture. Students should consult the catalog of the four-year institution which they might plan to attend.

Associate of Arts Degree Preparatory Program

Required Courses			Units
Perception	ART	1	4
Graphics I-II	ART	10, 20	6
Art and Culture	ART	15	3
Functional Design I-II	ART	12, 22	6–7
Visual-Spatial Arts	ART	21	3–4
			22–24
General Education Requirements			
Writing I-II	COM	1–2	6
Humanities I-II	HUM	10–11	8
Physics	PHY	2–3 or 4–5	8
Required Electives:			
Art History	ART	25	2–4
Art	ART	9 or 13	2–3
Math	MTH	11, 20, 24, 30, 31 or 40	6–8
Human Ecology or Behavioral or Social Science	LSC	15	4–7
Physical Education Elective	PED		2
			60–70

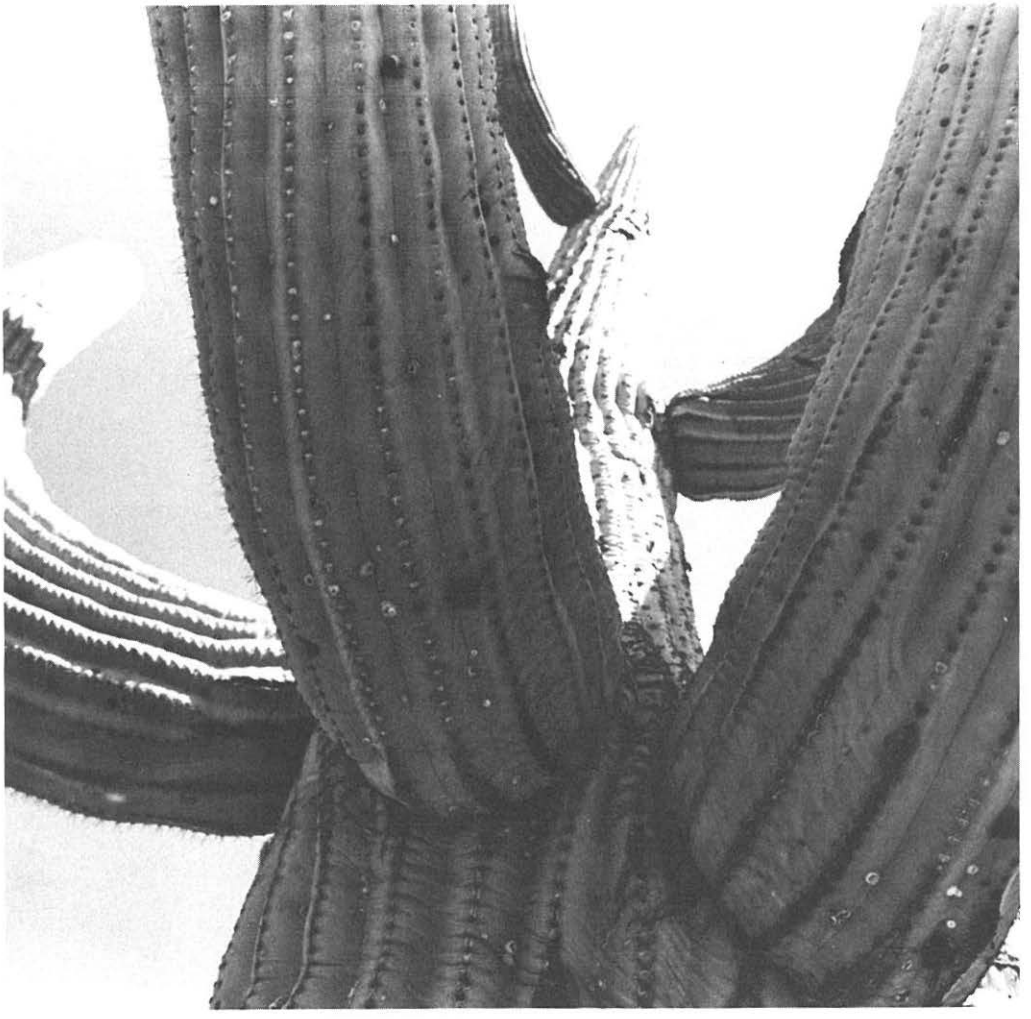
Pre-Law

PRE-LAW

Colleges of law usually have no specific pre-legal course requirements. Students interested in pursuing a legal career are urged to select courses which would reflect a well-rounded general education with perhaps an emphasis on history, political science and economics. A four-year college degree generally is required to enter a college of law as well as an acceptable score on the Law School Admissions Test. Each law school determines its own requirements for grade point average. Students can select from the following courses:

For Transfer

Suggested Courses			Units
Writing I-II	COM	1–2	6
College Algebra	MTH	20	3
Intro. to Politics	POL	1	3
Public Service Ethics	POL	3	3
National Government	POL	10	3
State & Local Gov.	POL	11	3
Comparative Politics	POL	20	3
Int'l. Relations	POL	30	3
Minority Groups	POL	40	3
Independent Study	POL	49	3
Immigration Law	POL	50	3
Sociology	SOC	30, 31	3–6
Psychology I	PSY	20	3
Humanities I-II	HUM	10, 11	4–8
Western Civilization	HIS	1–2	6
American Civilization	HIS	5–6	6
U.S. History	HIS	3–4	6
Math Elective	MTH		3–6
Economics Elective	ECO		3–9



Pre-Medical and Pre-Dental

PRE-MEDICAL AND PRE-DENTAL

Minimum requirements for admission to a medical or dental school have been established by the Association of American Medical Colleges and the council on medical education of the American Medical Association. While these minimum requirements are less than a bachelor's degree, all leading medical schools require a bachelor's degree as a prerequisite for students seeking admission. The associations strongly urge students to acquire a broad general education in all areas, particularly in the social or behavioral sciences and humanities rather than concentrate their studies in the sciences.

The completion of four years of college work with a bachelor's degree will not assure admission to a medical school. Admission to such schools is based on several factors including the quality of the student's work in college and his rank on the Medical College Admissions Test.

Courses offered at Pima Community College include those normally required for the first two years of a four-year curriculum leading to a B.S. degree in biology, zoology, chemistry or physics. 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.

Associate of Science Degree For Transfer

Required Courses			**Units**
General Chemistry I-II	CHM	3–4	8
Organic Chemistry I-II	CHM	40–41	8
Physics	PHY	4–5	8
General Biology I-II	LSC	3–4	8
Organismic Biology I-II	LSC	5–6	8
			40
General Education Requirements			
(Select 20 units)			
College Algebra	MTH	20	(3)
Algebra & Trigonometry	MTH	29	(5)
Anal. Geometry-Calculus I-II	MTH	30–31	(10)
Philosophy or Science			(3–4)
Psychology I	PSY	20	(3)
Sociology	SOC	30	(3)
Perception	ART	1	(4)
Writing I-II	COM	1–2	(6)
Humanities I-II	HUM	10–11	(8)
Physical Ed. Elective	PED		(2)
Electives			(6)
			20
			60

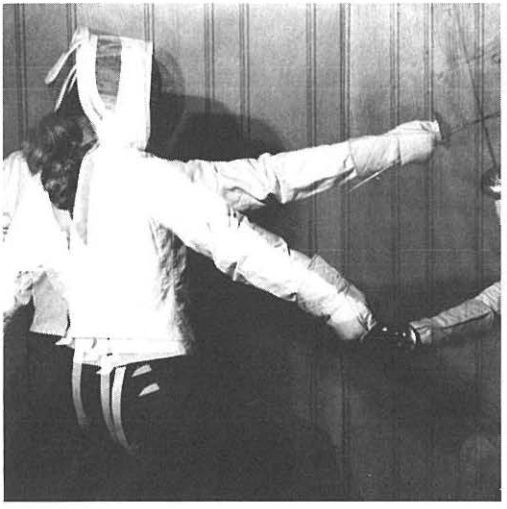
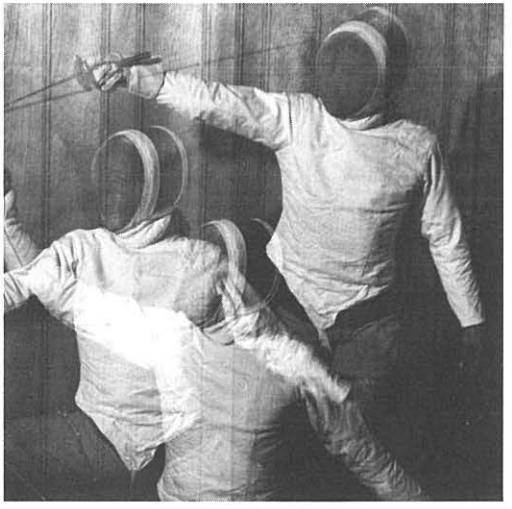
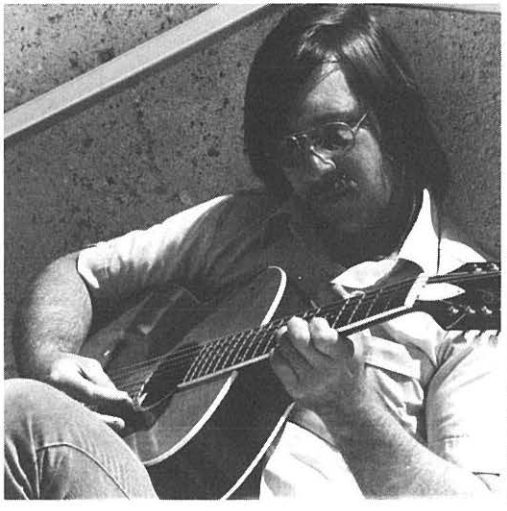
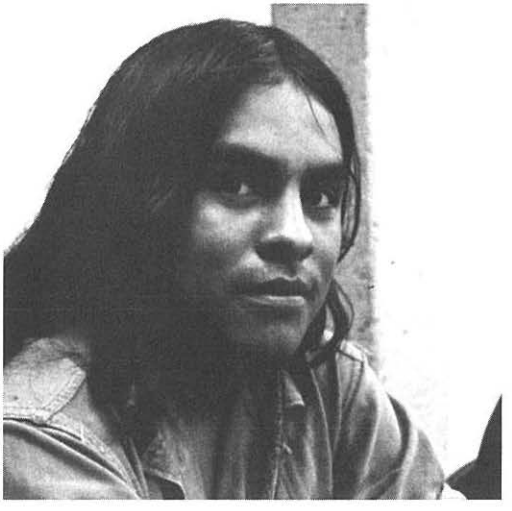
Pre-Optometry

PRE-OPTOMETRY

Entrance requirements to optometric colleges vary, but all require a minimum of two years college credit. Each student should inform himself of the entrance requirements of the professional school he plans to attend. Information on admission requirements also may be obtained from the American Optometric Association. Committee on Vocational Guidance, 7000 Chippewa Ave., St. Louis, Mo., 63119. Courses which generally satisfy the admissions requirements of most schools are offered at Pima Community College.

For Transfer

Suggested Courses			Units
Writing I-II	COM	1–2	6
General Biology I-II	LSC	3–4	8
General Chemistry I-II	CHM	3–4	8
Organic Chemistry	CHM	40	4
Physics	PHY	4–5	8
Psychology	PSY	20	3
Sociology	SOC	30	3
College Algebra	MTH	20	3
Algebra & Trigonometry	MTH	29	5
Anal. Geometry/Calculus I-II	MTH	30–31	10
Physical Ed. Elective	PED		2

Pre-Pharmacy

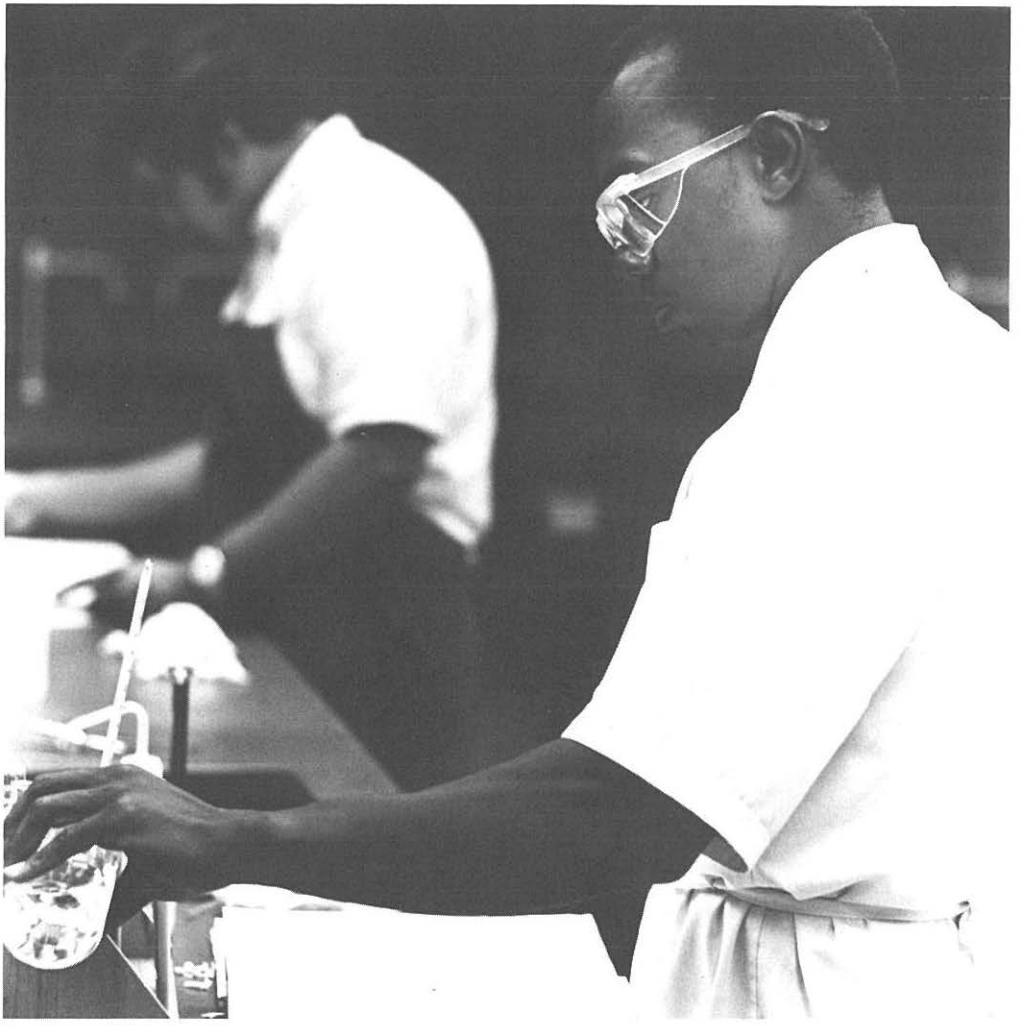
PRE-PHARMACY

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 clinical pharmacy, governmental service (i.e., Food and Drug Administration) and pharmaceutical research with public and private agencies. 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 pre-pharmacy before admission. The student is urged to contact the college of his choice for specific pre-pharmacy requirements. The following courses, offered at Pima Community College, meet the two-year pre-pharmacy requirement of the University of Arizona College of Pharmacy.

For Transfer

Required Courses			Units
General Chemistry I-II	CHM	3–4	8
Organic Chemistry I-II	CHM	40–41	8
Physics	PHY	4–5	8
Quantitative Chem.	CHM		3
Anatomy & Physiology I	LSC	20	4
Algebra & Trigonometry	MTH	29	5
Anal. Geometry/Calculus I	MTH	30	5
			41
General Education Requirements			
Writing I-II	COM	1–2	6
Humanities Elective	HUM		4
Physical Ed. Elective	PED		2
Select 10 units from the following:			10
Psychology	PSY	20	(3)
Sociology	SOC	30	(3)
History or Political Science			
Speech			
Military Science			
			63



Pre-Veterinary

PRE-VETERINARY

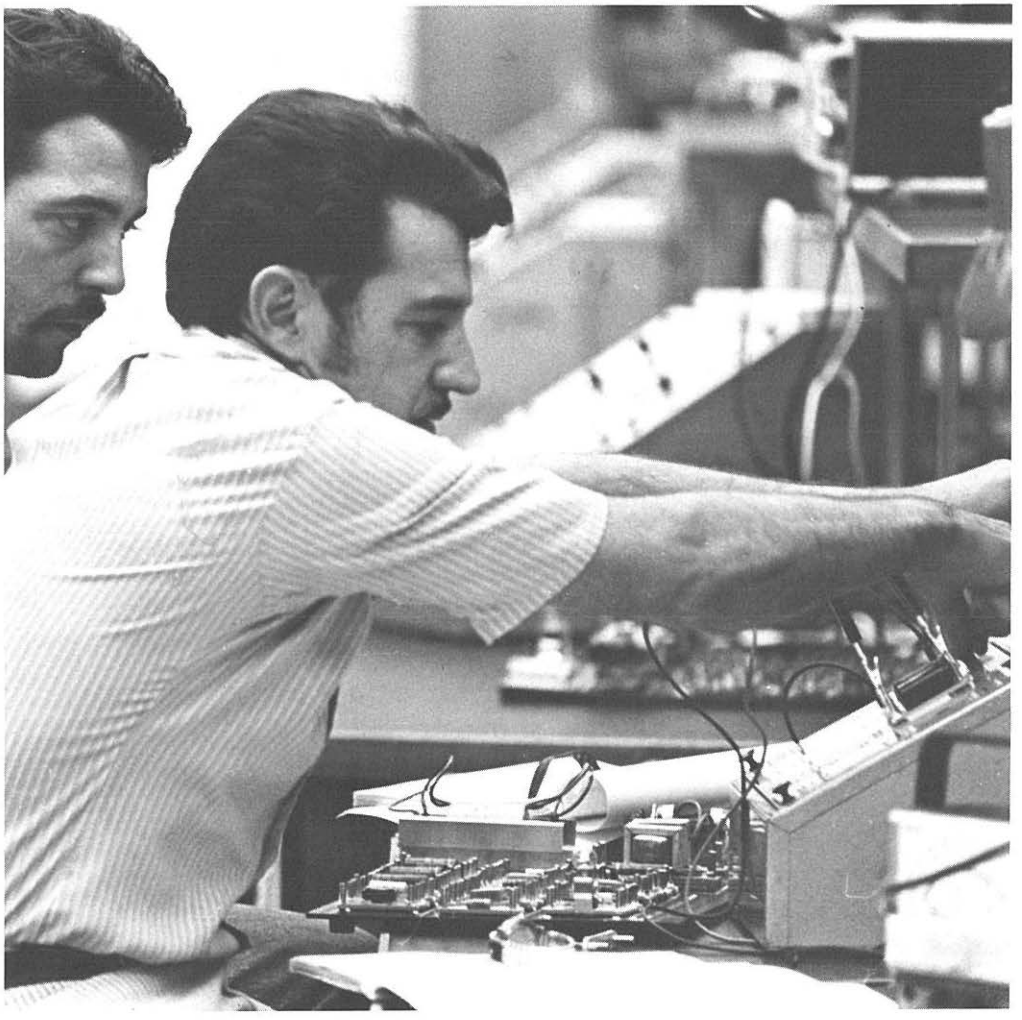
Career options open to graduate veterinarians include private practice in large and small animal clinics; college instruction; veterinary practice in the Agricultural Research Service, U.S. Department of Agriculture; livestock management; and veterinary microbiology and pathology.

Minimum standards for admission to veterinary schools have been established by the American Veterinary Medical Association. Generally, before the student is considered for admission to a veterinary school, he must have completed not less than two pre-professional years of college credit (60 semester credits). The following courses, offered at Pima Community College, are suggested for students interested in pursuing a career in veterinary medicine. Students, however, are urged to contact the school of their choice to determine specific admission requirements.

For Transfer

Suggested Courses			Units
Writing I-II	COM	1–2	6
General Chemistry I-II	CHM	3–4	8
Organic Chemistry I-II	CHM	40–41	8
Physics	PHY	4, 5	4–8
General Biology I-II	LSC	3–4	8
Organismic Biology I-II	LSC	5–6	8
Animal & Poultry Science*			6
Behavioral or Social Science & Humanities Electives			9
Electives			10

*These courses will be offered only if there is sufficient enrollment and only to those students who have completed the listed biological and physical science courses. Animal and Poultry Science courses also are offered at the University of Arizona.



PublicServices

CORRECTIONS

The field of Corrections offers a wide range of opportunities for the student interested in this aspect of the judicial system. Recent developments in the field have moved from emphasis on custodial concerns to focus on crime prevention, programs which modify recidivism rates and rehabilitative efforts.

Graduates of this program may find employment as juvenile and adult probation and parole counselors, half-way house employes and correctional institution counselors. Students may use this program as a basis for transfer to a four-year institution to pursue studies in the several fields of criminology. Persons currently employed in the field may find the program useful in upgrading their skills.

Associate of Arts Degree For Direct Employment or Transfer

Required Courses			Units
Intro. to Corrections	COR	102	3
Criminal Law I	LEN	78	3
Delinquency Control	COR	82	3
Juvenile Procedures	COR	84	3
Intro. to Info. Process*			3
Prison Society	COR	80	3
Reports	COR	78	3
Co-op Training	COR	199 or 299	3
Electives (for minimum of 6 units)			6
Suggested Electives:			
Public Service Ethics	LEN	3	(3)
Defensive Tactics	LEN	12	(2)
Firearms	LEN	14	(2)
Criminal Law II	LEN	79	(3)
Co-op Training	LEN	199 or 299	(3–9)
Special Problems	LEN	50	(1–6)
Marksmanship	REC	9	(1)
Police Community	LEN	82	(3)
			30
General Education Requirements			
Writing I-II	COM	1–2	6
Government	POL	10–11	6
Psychology	PSY	20	3
Physical Education	PED	9	4
Sociology	SOC	30	3
Math**			6
Economics	ECO	2–3	6
Philosophy or Science			3
Speech	SPE	2	3
			70

*Course being developed.

**Actual Course to be determined.

Note: Total of 64 units required for AA degree.

FIRE SCIENCE

The Fire Science program is designed to prepare a student for the occupation of a fire-fighter and to provide a continuing education opportunity for persons currently in fire-fighting. The program deals with the technical, managerial, para-medical and human aspects of fire-fighting tactics and the applications of modern methods of fire prevention and suppression.

At least half of the 60 semester hours required for an Associate of Science degree in Fire Science should be in courses directly related to the field. These courses prepare the graduate for service or additional responsibility in a governmental, rural, industrial or private fire department and other agencies in the fire protection field.

The other half of the program, selected after consultation with a faculty adviser, should include study in mathematics, chemistry, physics, life sciences, humanities, basic psychology, sociology and American government.

Associate of Science Degree For Direct Employment

Required Courses			Units
Chem. Special Topics	CHM	50	4
Intro. to Fire Science	FSC	51	3
Fund. Fire Prevention	FSC	52	3
Hazardous Mtls. I-II	FSC	53, 61	6
Adv. Fire Protection	FSC	54	3
Fire Suppression	FSC	62	3
Fire Apparatus	FSC	63	3
Protection Systems	FSC	64	3
Bldg. Construction	FSC	65	3
Fire Fighting	FSC	66	3
			34
General Education Requirements			
Writing I-II	COM	1–2	6
Algebra	MTH	70	3
Geometry	MTH	71	3
Humanities I-II	HUM	10–11	8
Tech. Physics I	PHY	50	3
Electives			3
Select electives from:			
Comm. Relations	LEN	82	(3)
Public Service Ethics	POL	3	(3)
Ethnic Studies			(3)
Physical Fitness	PED	9	(1)
Automotive Engines	AUT	99	(3–5)
Supervision	MAN	54	(3)
Human Relations	MAN	58	(3)
			60

LAW ENFORCEMENT

A graduate of the Law Enforcement program may be employed in police departments, sheriff's offices, with state police and federal law enforcement agencies, with industrial plant security forces or private investigation agencies. Persons currently employed in the law enforcement field may find the program useful in the upgrading of their skills. Additionally, the program may serve as the basis for transfer to a four-year program at a college or university in the law enforcement or corrections field.

Students entering the Law Enforcement program must be advised by a Law Enforcement instructor,.

Associate of Arts Degree
For Direct Employment or Transfer

Required Courses			Units
Intro. to Law Enforcement	LEN	100	3
Criminal Law I	LEN	78	3
Investigation & Rpts.	LEN	104	3
Traffic Functions	LEN	106	3
Police Community	LEN	82	3
Electives (for a minimum of 11 units)			11
Suggested Electives:			
Public Service Ethics	LEN	3	(3)
Defense Tactics	LEN	12	(2)
Firearms	LEN	14	(2)
Security	LEN	60	(3)
Patrol Procedures	LEN	71	(3)
Fingerprinting	LEN	72	(3)
Crime Scene Tech.	LEN	73	(3)
Basic Criminalistics	LEN	76	(3)
Adv. Criminalistics	LEN	77	(3)
Criminal Law II	LEN	79	(3)
Juvenile Procedures	LEN	84	(3)
Co-op Training	LEN	199 or 299	(3)
Intro. to Corrections	LEN	102	(3)
Police Administration	LEN	108	(3)
Special Problems	LEN	50	(1–6)
Basic Marksmanship	LEN	9	(1)
Leadership	REC	2	(2)
			26
General Education Requirements			
Writing I-II	COM	1–2	6
Government	POL	10–11	6
Sociology	SOC	30	3
Physical Education	PED	9	4
Psychology	PSY	20	3
Humanities I-II	HUM	10–11	8
Microeconomics	ECO	2	3
Speech	SPE	2	3
			62–64

Note: Job entry students must have 24 sem. hrs. in Law Enforcement. Transfer students should follow requirements of the four-year institution to which they plan to transfer, taking only the five core courses (LEN 100, 78, 104, 106 and 82).

MILITARY SCIENCE

The general objective of the Military Science (R.O.T.C.) program is to furnish leaders suitable for commissioning as Reserve Officers. Intermediate objectives are to develop self discipline, integrity, a sense of responsibility, and capacities for thoughtful and decisive leadership.

Uniforms, insignia of rank and instructional materials used in Military Science are furnished by the Department of Army without cost to the student.

Students completing the two-year program and continuing training at a four-year institution will receive a subsistence pay of $100 per month, plus some $265 per month for prescribed summer training between the junior and senior years.

All Military Science courses are taught at the University of Arizona.

PARK / FOREST SERVICE TECHNICIAN

A program for training and qualifying students for the technician level in the Park and Forest Service agencies in the western region is being developed and may be offered in the fall.

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
Associate of Arts Degree
For Direct Employment

Required Courses				Units
Intro. to Recreation	REC	1		3
Ecology	LSC	1–2		8
Group Leadership	REC	2		2
Admin. & Finance	REC	3		3
Outdoor Recreation	REC	15		3
Survival	REC	18		2
Electives (For a minimum of 30 units)				30
Recommended Electives:				
Human Relations	REC	58		(3)
Facilities & Maintenance	REC	20		(3)
Park Administration	REC	59		(3)
Conservation	REC	70		(3)
Rec. Systems & Mgmt.	REC	52		(3)
Public Relations	REC	74		(3)
Arizona Flora	REC	71		(3)
Recreation Activities	REC	9–12		(1–4)
Water Recreation	REC	75		(3)
Co-op Training	REC	199 or 299		(3–12)
				55
General Education Requirements				
Writing	COM	1, 4 or 1–2		6
College Algebra	MTH	20		3
Business & Prof. Comm.	SPE	20		3
				63

Note: Employment requirements vary depending upon the degree of responsibility. Among employment possibilities are park attendant, guide, wrangler, outdoor recreation facilities management, conservation technician, campgrounds caretaker, game protector, fish warden, wildlife aide and hunter-safety coordinator.

Recreation Leader
Associate of Arts Degree
For Direct Employment

Required Courses				Units
Intro. to Recreation	REC	1		3
Admin. & Finance	REC	3		3
Group Leadership	REC	2		2
Survival	REC	18		2
Outdoor Recreation	REC	15		3
Ecology	LSC	1–2		8
Recreation Activities	REC	9–12		1–4
Electives (For a minimum of 26 units)				26
Recommended Electives:				
Facilities & Maintenance	REC	20		(3)
Recreation Games	REC	19		(2)
Drug Education	REC	21		(2)
Program Planning	REC	14		(3)
Sports Officiating	REC	45–46		(2)
Rec. for Special Groups	REC	16		(3)
Arts & Crafts	REC	51		(3)
Dance	REC	44		(2)
Stagecraft	DRA	20		(2)
Child Growth	REC	17		(3)
Co-op Training	REC	199 or 299		(3–12)
Recreational Activities	REC	9–12		(1–3)
				55–58
General Education Requirements				
Writing	COM	1, 4 or 1–2		6
College Algebra	MTH	20		3
Business & Prof. Comm.	SPE	20		3
				60–63

Note: 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.

Pre-Professional Recreation
Associate of Arts Degree
For Transfer

Required Courses				Units
Intro. to Recreation	REC	1		3
Ecology	LSC	1–2		8
Group Leadership	REC	2		2
Admin. & Finance	REC	3		3
Survival	REC	18		2
Outdoor Recreation	REC	15		2
				20
General Education Requirements				
Writing I-II	COM	1–2		6
Public Speaking	SPE	10		3
College Algebra	MTH	20		3
Electives (to be selected from catalog of institution to which student is planning to transfer)				30
				62

Note: Employment requirements vary depending upon the degree of responsibility. Among employment possibilities are community centers, specialist, nature centers guide, camp counselor, industrial plants, youth agencies and sports specialist.

SOCIAL SERVICES

The Social Services program qualifies students for employment in a variety of community service agencies which deal with mental health, welfare, corrections, 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 for him 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 includes 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.

A subspecialty in drug counseling also is available within the Social Services program. This course of study includes units on various treatment modalities, the physiological and psychological effects of drugs, the 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.

One-Year Certificate Program For Direct Employment

Required Courses			Units
Intro. Social Welfare	SSE	33	3
Casework Methods	SSE	34	3
Group Work	SSE	35	3
Community Organization	SSE	16	3
Co-op Training	SSE	199	6
Writing I-II	COM	1–2	6
Electives			6
			30

Associate of Arts Degree For Direct Employment

Required Courses			Units
Intro. Social Welfare	SSE	33	3
Casework Methods	SSE	34	3
Group Work	SSE	35	3
Community Organization	SSE	16	3
Co-op Training	SSE	199 or 299	6
			18
General Education Requirements			
Writing I-II	COM	1–2	6
Oral Communication	SPE	2	3
Psychology I	PSY	20	3
Intro. Sociology	SOC	30	3
Electives			27
			60

Social Sciences Major For Transfer (U. of A.)

Required Courses			Units
Intro. Social Welfare	SSE	33	3
Casework Methods	SSE	34	3
Group Work	SSE	35	3
Community Organization	SSE	16	3
Co-op Training	SSE	199 or 299	6
Electives in the Behavioral or Social Sciences			6
			24
General Education Requirements			
Psychology I	PSY	20	3
Writing I-II	COM	1–2	6
Humanities I-II	HUM	10–11	8
Intro. Sociology	SOC	30	3
Lab Science or Math			8
Electives			8
			60

Note: Four semesters of a foreign language or language proficiency are required for the Bachelor's degree. Students unable to challenge the university's proficiency examination should consider satisfying the language requirement while at Pima.

Public Administration Major For Transfer (U. of A.)

Required Courses			Units
Intro. Social Welfare	SSE	33	3
Casework Methods	SSE	34	3
Group Work	SSE	35	3
Community Organization	SSE	16	3
Co-op Training	SSE	199 or 299	6
			18
General Education Requirements			
Public Service Ethics	POL	3	3
National Government	POL	10	3
State, Local Government	POL	11	3
Psychology I-II	PSY	20–21	6
Intro. Sociology	SOC	30	3
Writing I-II	COM	1–2	6
Humanities I-II	HUM	10–11	8
Microeconomics	ECO	2	3
Macroeconomics	ECO	3	3
Business Communication	SPE	20	3
Computer Science I	CSC	40	1
Philosophy or Lab Science			6–8
			66–68

Technologies

AIR CONDITIONING AND SHEET METAL

Students are provided conditions similar to industry through a fully equipped sheet metal shop and air conditioning laboratory.

In air conditioning, the student learns about both the heating and cooling cycles. He also learns to disassemble, rebuild, repair and reassemble all types of air conditioning units.

Sheet metal shop classes teach him how to calculate, size, lay-out and fabricate duct work for use in air conditioning installation. The student, in addition, is taught how to adapt to other areas of the sheet metal industry.

One-Year Diploma Program For Direct Employment

Required Courses			Units
Air Conditioning Fund.	ACD	60	3
Air Conditioning Phase I-II	ACD	65–66	8
Sheet Metal I-II	SML	70–71	8
Sheet Metal Layout I-II	SML	80–81	6
Combination Welding	WLD	55	3
Sheet Metal Math	MTH	74–75	6
			34

Associate of Science Degree For Direct Employment

Required Courses			Units
Air Conditioning Fund.	ACD	60	3
Air Cond. Phase I-IV	ACD	65–68	16
Sheet Metal I-II	SML	70–71	8
Sheet Metal Layout I-III	SML	80–82	9
Sheet Metal Math	MTH	74–75	6
Combination Welding	WLD	55	3
			45
General Education Requirements			
Practical Comm.	COM	50	3
Tech. Physics I-II	PHY	50, 52	6
Elective			3
Additional units from above area			9
			66

AUTOMOTIVE TECHNOLOGY

The Automotive Technology department offers a variety of avenues of study including a two-year Associate of Science degree program, a two-year automotive mechanic diploma program, several automotive mechanic certificate programs and 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 for the mechanic diploma program are trained in general automotive repair. Cooperative training, offered as an elective course, is highly recommended for the mechanic diploma program.

The various mechanic certificate programs offer opportunities for specialization in a particular area of automotive repair. At least two automotive courses in a particular area are required under certificate programs. Persons who later decide to advance to the diploma or degree level may use the certificate programs as a beginning step.

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

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

Certificate Programs For Direct Employment

Suggested Courses			Units
Engine Repair and Rebuilding:			
Internal Combustion Engines	AUT	52	4
Engine Rebuilding	AUT	55	4
Engine Repair and Tune-up:			
Internal Combusion Engines	AUT	52	4
Engine Tune-up	AUT	56	4
Automatic Transmission:			
Automatic Transmissions I	AUT	50	4
Automatic Transmissions II	AUT	51	4
Standard Transmission and Differential:			
Drive Line	AUT	57	4
Automotive Suspension:			
Automotive Chassis	AUT	61	4
Drive Line	AUT	57	4
Automotive Brake:			
Automotive Brakes	AUT	62	4
Drive Line	AUT	57	4
Automotive Electrical Systems:			
Automotive Electricity I	AUT	68	3
Automotive Electricity II	AUT	69	3
Automotive Air Conditioning:			
Automotive Air Conditioning	AUT	63	3
Advanced Diagnosis and Performance:			
Performance Engines	AUT	87	3
Specialization Lab	AUT	100	3
Internal Combusion Engines	AUT	52	4
Engine Rebuilding	AUT	55	4
Engine Tune-up	AUT	56	4
Automotive Electricity I	AUT	68	3
Automotive Electricity II	AUT	69	3
Automotive Chassis	AUT	61	4
Automotive Brakes	AUT	62	4

Two-Year Diploma Program For Direct Employment

Required Courses			Units
Automatic Transmission I-II	AUT	50–51	8
Internal Combusion Engines	AUT	52	4
Engine Rebuilding	AUT	55	4
Engine Tune-up	AUT	56	4
Drive Line	AUT	57	4
Automotive Chassis	AUT	61	4
Automotive Brakes	AUT	62	4
Automotive Air Conditioning	AUT	63	3
Automotive Electricity I-II	AUT	68–69	6
Combination Welding	WLD	55	3
			44
General Education Requirements			
Technical Communication	COM	54	3
Auto Math	MTH	84	3
Technical Physics I	PHY	50	3
			53

Note: It is recommended that students enroll in Cooperative Training (AUT 199 and 299), an elective course.

Associate of Science Degree For Direct Employment

Required Courses			Units
Automatic Transmissions I-II	AUT	50–51	8
Internal Combusion Engines	AUT	52	4
Engine Rebuilding	AUT	55	4
Engine Tune-up	AUT	56	4
Drive Line	AUT	57	4
Automotive Chassis	AUT	61	4
Automotive Brakes	AUT	62	4
Automotive Air Conditioning	AUT	63	3
Automotive Electricity I-II	AUT	68–69	6
Combination Welding	WLD	55	3
			44
General Education Requirements			
Technical Communication	COM	54	3
Auto Math	MTH	84	3
Technical Physics I	PHY	50	3
Suggested Electives: (To total 15 sem. hrs.)			15
Performance Engines	AUT	87	(3)
Business Math	BUS	51	(3)
Writing I-II	COM	1–2	(6)
Practical Comm.	COM	50	(3)
Technical Drafting I	DFT	55	(3)
Automotive Parts Sales	GTC	87	(3)
Machine Shop I	MAC	52	(4)
Small Business Mgmt.	MAN	52	(3)
Supervision	MAN	54	(3)
Human Relations	MAN	58	(3)
Marketing	MAN	59	(3)
College Algebra	MTH	20	(3)
			68

Note: Other electives may be substituted for those listed with the approval of the student's major adviser and concurrence with the Registrar.

AVIATION

A two-year aviation maintenance program is being explored by the college faculty with the assistance of an advisory committee. Until a full determination is made regarding the program, the college plans during the 1973–74 academic year to repeat a program being held in conjunction with the Air National Guard and Davis-Monthan Air Force Base in Tucson, Arizona.

DRAFTING TECHNOLOGY

ARCHITECTURAL DRAFTING: This two-year program, which leads to an Associate of Science degree, is designed to provide experiences in drafting techniques and practices for employment in construction-oriented fields. A diploma program also is offered.

MECHANICAL and ELECTRO-MECHANICAL DRAFTING: Both two-year and diploma programs are provided. The two-year program leads to an Associate of Science degree, and opportunity for employment in drafting departments of several types of industry.

One-Year Diploma Program For Direct Employment

Required Courses			Units
Drafting (Architectural, Mechanical and/or Electro-Mechanical)			12
Tech. Math	MTH	80–81	6
Electives (related)			12
			30

Architectural Associate of Science Degree For Direct Employment and Transfer

Suggested Courses			Units
Construction Dftg. I-IV	DFT	61–64	12
Construction Deter. I-II	DFT	66–67	6
Tech. Math I-II	MTH	80–81	6
Graphics I	ART	10	3
Bldg. & Site Work	DFT	65	3
Surveying	ENG	70	3
Special Dftg. Project	DFT	99	3
			36
General Education Recommendations			
Writing I-II	COM	1–2	6
Perception	ART	1	4
Math Elective*			3
Physics Elective			2–4
Physical Ed. Elective			2
Electives**			9–11
			62–66

*Students planning on college transfer may take MTH 20 and 24 in place of MTH 80, 81 and the math elective.

**Six units minimum to be of the following options: HUM 10 and 11, HIS 1–2, ART 12 and 25, LSC 15, FSC 63 and CSC elective.

Electro-Mechanical Associate of Science Degree For Direct Employment

Required Courses			Units
Tech. Drafting I-III	DFT	55-57	9
Electronic Drafting	DFT	73	3
Electro-Mech. Drafting	DFT	77	4
Tech. Math I-II	MTH	80–81	6
Mfg. Processes I-II	MAC	72, 82	6
Engineering Graphics	ENG	2	3
			31
General Education Requirements			
Human Relations	MAN	58	3
Practical Comm.	COM	50	3
Tech. Communications	COM	54	3
Tech. Physics	PHY	50	3
Expl. Electronics	ETR	72	3
Intro. to Computers	CSC	47	3
Physical Education	PED		2
Suggested Electives: (For 12 units)			12
Tech. Illustration	DFT	71	(2)
Machine Shop	MAC	52	(4)
Functional Design I	ART	12	(3)
			63

Mechanical Associate of Applied Science Degree For Direct Employment and Transfer

Required Courses			Units
Tech. Drafting I-III	DFT	55–57	9
Tool Design	DFT	58	4
Elect. Drafting	DFT	73	3
Mfg. Processes I-II	MAC	72, 82	6
Machine Shop	MAC	52	4
Tech. Math I-II	MTH	80–81	6
Tech. Illustration	DFT	71	2
Functional Design I	ART	12	3
			37
General Education Requirements			
Expl. Electronics	ETR	72	3
Tech. Physics	PHY	50	3
Human Relations	MAN	58	3
Intro. to Computers	CSC	47	3
Practical Comm.	COM	50	3
Tech. Communications	COM	54	3
Humanities I-II	HUM	10–11	8
Physical Ed.	PED		2
			65

Note: Most drafting technology courses will transfer to Arizona universities for drafting and design technology, mechanical engineering technology, and industrial education programs.

ELECTRONICS TECHNOLOGY

The two-year Electronics Technology program provides a sufficient background for the student to find employment in many areas of the electronics field as an electronics technician. He may pursue a career in industrial electronics, computer and digital systems or communications electronics. Certain specialized skills within the field may require additional part-time study, on-the-job training and/or cooperative educational experience.

Persons currently employed in the electronics field may find the program useful in upgrading their skills.

The following curriculum qualifies the student for the Associate of Science degree and direct employment. It is not a transfer program. Students interested in engineering programs at 4-year institutions should consult their adviser.

Associate of Science Degree For Direct Employment

Required Courses			Units
Fund. Elect. (DC-AC)	ETR	53	6
Trans./Vac. Tubes	ETR	55	3
Circuits I	ETR	57	6
Digital Logic I	ETR	80	3
Elect. Math I-III	MTH	82, 83, 86	9
Drafting	DFT	55, 73	6
			33
General Education Requirements			
Writing	COM	1, 2, 4	9
Electives*			18
			60

*Students should consult their adviser on recommended electives.

TOOL AND MACHINE TECHNOLOGY

The Tool and Machine 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, time study and drafting. Both a two-year degree and a one-year diploma program are available.

One-Year Diploma Program For Direct Employment

Required Courses			Units
Machine Shop I-II	MAC	52, 62	8
Technical Math I-II	MTH	80–81	6
Drafting I	DFT	55	3
Combination Welding	WLD	55	3
Sheet Metal Layout I	SML	80	3
Practical Communications	COM	50	3
Technical Physics I	PHY	50	3
Human Relations	MAN	58	3
			32

Associate of Science Degree For Direct Employment

Required Courses			Units
Machine Shop I-II	MAC	52, 62	8
Drafting I-II	DFT	55–56	6
Technical Math I-II	MTH	80–81	6
Sheet Metal Layout I	SML	80	3
Jig & Fixture Design	MAC	73	4
Combination Welding	WLD	55	3
Numerical Control	MAC	51	2
Mfg. Processes I	MAC	72	3
Quality Control II	MAC	84	3
			39
General Education Requirements			
Practical Communication	COM	50	3
Human Relations	MAN	58	3
Tech. Physics I-II	PHY	50, 52	6
Behavioral or Social Sciences			6
Electives			9
			65

WELDING

Welding courses and equipment are being expanded in preparation of offering both a one- and two-year program. Plans are to have the programs developed in the near future.

Among courses being offered are arc welding, heli-arc welding, oxy-acetylene welding, metal-inert-gas welding, and blueprint reading for welders.

courses

ART 12 Functional Design I / 3 sem. hrs.

☐ Prerequisite: ART 1 recommended.
Our physical and technological environments are studied and models developed for exploring simple problems of design and function. Participants, working both individually and in groups, are as directly involved as possible with the actual environment. (Offered both semesters.)

ART 13 Introduction to Photography / 3 sem. hrs.

☐ Prerequisite: ART 1.
An introduction to photography with a general inquiry into the nature of "making pictures." Includes basic developing, printing and enlarging. Individual and group work. (Offered both semesters.)

ART 15 Art and Culture / 3 sem. hrs.

☐ Prerequisite: ART 1 or equivalent.
Presentation and discussion of art forms from various traditional and contemporary cultures. Some studio experience included. (Offered both semesters.)
First Year Level.

ART 20 Graphics II / 3 to 6 sem. hrs.

Prerequisite: ART 10.
Experience with the special problems of the graphics industry and commercial design. Students also pursue solutions to problems on an individual basis. (Offered both semesters.)

ART 21 Visual and Spatial Arts / 2 to 6 sem. hrs.

☐ Prerequisite: ART 10.
Intensive studio experience in one or more media. Separate sections pursue different media or processes such as painting, print making, three-dimensional design, metal sculpture and drawing. (Offered both semesters.)

ART 22 Functional Design II / 3 to 6 sem. hrs.

☐ Prerequisite: ART 10, 12, 20.
Individuals and small teams participate in studio exercises and pursue solutions to environmental design problems. Focus is on the basic problems of interior, industrial, architectural and landscape design. (Offered both semesters.)

ART 23 Audio Visual Communication / 2 to 4 sem. hrs.

☐ Prerequisite: ART 13 or equivalent.
A continuation of ART 13 with emphasis on more advanced concerns and techniques of photography. Separate sections pursue different media or processes such as photojournalism, visionary photography, 8mm film and video-tape. Individual and group projects. (Offered both semesters.)

ART 25 History, Philosophy and Psychology of Design / 2 to 4 sem. hrs.

☐ Prerequisite: ART 1 or 15.
Study of particular movements, periods, ideas and problems in art and design arranged each semester by separate sections or for individual study, according to need. (Offered both semesters.)

ART 60 Principles of Lapidary / 3 sem. hrs.

(Same as Earth Sciences 60.)

ART 121 Handwriting, Calligraphy and Lettering

An introduction to italic handwriting through demonstrations and practice with the pen. Course is extended to include writing, sign painting and other uses. (Offered both semesters.)
Non-Credit.

ART 199 Cooperative Art Training / 3 sem. hrs.

A supervised cooperative work program for students in an exploratory art occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

ART 299 Cooperative Art Training / 3 sem. hrs.

A supervised cooperative work program for students in an art occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

ASTRONOMY

AST 1-2 Introduction to Astronomy / 4-4 sem. hrs.

An introduction to the basic principles and methods of astronomy. (Includes laboratory.) (AST 1 and 2 offered both semesters.)
First Year Level.

AUTOMOTIVE

AUT 50 Automatic Transmissions I / 4 sem. hrs.

The identification and classification of all parts and principles of hydraulics, planetary gear assembly, multiple clutches and bands, and power flow plus lab project of completely overhauling at least one automatic transmission during the semester. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 51 Automatic Transmissions II / 4 sem. hrs.

Hydraulic circuits and controls, hydraulic pressure controls, diagnosis and repair of hydraulic pressure loss and internal oil leaks. Includes lab project of one complete automatic transmission overhaul during the semester. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 52 Internal Combustion Engines / 4 sem. hrs.

Construction, design, operating principles, diagnosis procedures and common repairs of modern internal combustion engines. Stresses the interrelationship of various engine systems. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 55 Engine Rebuilding, Automotive / 4 sem. hrs.

☐ Prerequisite: AUT 52.
This course is for the student who has a firm understanding of the physical construction and internal operation of the automotive engine. Covered are diagnosis, measuring, estimating, repairing and machining of the automotive engine. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 56 Engine Tune-Up, Automotive / 4 sem. hrs.

The interpretation and application of electronic test equipment results to maintain engine efficiency and exhaust emission standards. Proper tune-up procedures are stressed. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 57 Drive Line, Automotive / 4 sem. hrs.

Construction, operation, diagnosis and repair of manual shift transmissions and clutches, universal joints and propeller shaft, and drive axle and differential. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 61 Automotive Chassis / 4 sem. hrs.
Study and practice of front end alignment, wheel balancing, suspension overhaul. Also a review of manual and power steering systems. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 62 Automotive Brakes / 4 sem. hrs.
Diagnosis and repair of automotive brakes. Includes hydraulic systems, drum and disc brakes, and power brake systems. (3 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 63 Automotive Air Conditioning / 3 sem. hrs.
Fundamentals of refrigeration and automotive application of refrigeration. Stressed is system operation and problem diagnosis. (2 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 68 Automotive Electricity I / 3 sem. hrs.
Fundamentals of electricity and electrical circuits as applied to automobiles. (2 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 69 Automotive Electricity II / 3 sem. hrs.
Diagnosis and repair of automotive electrical systems using modern diagnostic equipment. (2 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 87 Performance Engines / 3 sem. hrs.
☐ Prerequisite: Proven ability to diagnose and repair standard vehicle. A sound math background is helpful.
Engine design theory and construction modifications used to improve power output. Also covers related drive train and suspension modifications necessitated by increased power. (Offered both semesters.)

AUT 88 Automotive Maintenance / 2 sem. hrs.
This course covers the proper techniques of routine vehicle maintenance. Designed for those who have little or no automotive service experience. (1 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 90 Automotive Body and Fender Repair / 3 sem. hrs.
Fundamentals of sheet metal repair using basic metal working tools. Instruction is limited to minor damage repair, parts replacement and alignment. (2 hour lecture, 2 hour lab.) (Offered both semesters.)

AUT 99 Independent Study / 3 to 5 sem. hrs.
☐ Prerequisite: 30 sem. hrs. in Auto Technology program.
The student is permitted latitude in pursuing special interest projects related to the automotive field. A written technical report is required. (Offered both semesters.)

AUT 100 Specialization Lab / 3 sem. hrs.
☐ Prerequisite: Minimum of 8 hrs. in Auto Technology program.
Advanced laboratory projects designed to allow students extra opportunity for supervised application of skills developed in program courses. (6 hour lab per week.) (Offered both semesters.)

AUT 121 Know Your Car
This course is designed to help laymen and women understand. basically, how a car is supposed to function, what is expected from the car and how to recognize trouble signs. Safety and how to deal with repairmen also are included. (A six-week course offered twice a year.)
Non-Credit.

AUT 199 Cooperative Automotive Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory automotive occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

AUT 299 Cooperative Automotive Training / 3 sem. hrs.
A supervised cooperative work program for students in an automotive occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

BUSINESS

BUS 5-6 Statistical Methods in Economics and Business / 3-3 sem. hrs.
☐ Prerequisite: MTH 20, BUS 5 for BUS 6.
Students develop an understanding of statistical techniques and their applications for use in economic and business decision making. (BUS 5 offered in the Fall, BUS 6 in the Spring.)
Second Year Level.

BUS 10 Business Law I / 3 sem. hrs.
This course covers such legal topics as the judicial system, law of contracts, law of agency, law of sales and law of negotiable instruments. (Offered both semesters.)

BUS 50 Introduction to Business / 3 sem. hrs.
A survey of fundamental characteristics and functions of modern business involving business principles, marketing, record keeping and risks, as well as a historical review of business development, including the viewpoint of various ethnic groups. (Offered both semesters.)

BUS 51 Mathematics of Business / 3 sem. hrs.
Involves the application of basic mathematical procedures to business situations. Includes percentage formula application, mark-up, and simple and compound interest.
(Offered both semesters.)

BUS 52 Analyzing Financial Statements / 3 sem. hrs.
Characteristics of financial statements and their analysis are covered in the course. There will be a review of basic accounting principles for those who have studied accounting. For those who have not, there will be a minimum accounting background provided for financial statement analysis.

BUS 53 Installment Credit / 3 sem. hrs.
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.

BUS 58 Business Finance / 3 sem. hrs.
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.
Second Year Level.

BUS 59 Business Communications / 3 sem. hrs.

☐ Prerequisite: OED 54.
A study is made of various means of communications, such as letters, business reports, dictation techniques and telephone conferences. (Offered both semesters.)

BUS 60 Business Law II / 3 sem. hrs.

☐ Prerequisite: BUS 10.
This is a continuation of BUS 10 and covers such legal topics as the law of personal property, law of real estate, law of partnership and law of corporation. (Offered in the Spring.)

BUS 61 Bank Investments / 3 sem. hrs.

This course describes the nature of primary reserves and loanable funds and how their uses are determined. Also analyzed are primary and secondary reserve needs of commercial banks, reserve sources and their fluctuations. A study of yield changes and their effect on long-term holdings of banks also are covered.

BUS 62 Bank Management / 3 sem. hrs.

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.

BUS 68 Credit Administration / 3 sem. hrs.

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.

BUS 69 Principles of Bank Operations / 3 sem. hrs.

The fundamentals of bank functions are given in a descriptive fashion to help the beginning banker view his profession in a broad perspective.

BUS 70 Trust Department Organization / 3 sem. hrs.

The course concentrates on the actual operation and administration of the trust institution; how a trust department is organized, how responsibility is shared among divisions, how department growth may be stimulated.

BUS 71 Bank Letters and Reports / 3 sem. hrs.

For bank officers, supervisors and employes 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.

BUS 72 Money and Banking / 3 sem. hrs.

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.

BUS 73 International Banking / 3 sem. hrs.

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.

BUS 74 Home Mortgage Lending / 3 sem. hrs.

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.

BUS 75 Savings and Time Deposit Banking / 3 sem. hrs.

Reviewed are the economics of the savings process, clarifying differences between savings by individuals or organizations and real savings that appear as capital formation; and the different types of financial savings.

BUS 76 Trust Department Services / 3 sem. hrs.

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.

BUS 77 Fundamentals of Bank Data Processing / 3 sem. hrs.

A broad and non-technical explanation of electronic data processing as applied to banks.

BUS 78 Agricultural Finance / 3 sem. hrs.

Emphasized are general principles associated with the evaluation of management and the use of capital, rather than land and labor resources. It provides the banker with an understanding of agriculture finance to help satisfy credit needs of modern agriculture.

BUS 79 Savings and Loan Business Operations / 3 sem. hrs.

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.

BUS 80 Financial Institutions / 3 sem. hrs.

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.

BUS 81 Insurance of Savings Accounts / 3 sem. hrs.

☐ Prerequisite: BUS 79.
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.

BUS 82 Insurance / 3 sem. hrs.

☐ Prerequisite: BUS 10, 60.
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 program, general liability insurance program, excess and umbrella liability contracts, special multi-peril contracts, planning and buying insurance.

CHEMISTRY

CHM 1-2 Introductory Chemistry I, II / 3-3 sem. hrs. lecture / 1-1 sem. hr. lab
Classification and structure of matter along with basic principles of chemical reactions and their relevancy to common environments. Designed to meet the needs and interests of non-science majors. (Offered both semesters.)
First Year Level.

CHM 3-4 General Chemistry I, II / 3-3 sem. hrs. lecture / 1-1 sem. hr. lab
☐ Prerequisite: MTH 11 or consent of instructor.
The principles of chemistry, essential concepts, models and problem solving techniques. Emphasis is on chemical bonding, periodicity, chemical properties, stoichometry, kinetics and descriptive inorganic chemistry. Course is required for science, pre-medical and pre-dental majors. (Offered both semesters.)
First Year Level.

CHM 5-6 Introduction to Chemistry I, II / 3-3 sem. hrs. lecture / 1-1 sem. hr. lab
The classification, structure and general chemical behavior of inorganic, organic and biochemical systems as a basis for the study of some life processes. Adapted to the needs of nursing and health sciences students. (Offered both semesters.)
First Year Level.

CHM 12 Concepts in Chemistry / 3 sem. hrs.
The study of basic concepts in chemistry and their applications. For elementary education majors. (Offered in the Fall.)
First Year Level.

CHM 40-41 Organic Chemistry I, II / 3-3 sem. hrs. lecture / 1-1 sem. hr. lab
☐ Prerequisite: CHM 4 or equivalent 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. (Offered both semesters.)
Second Year Level.

CHM 50 Topics in Physical Science / 1 to 4 sem. hrs.
☐ Prerequisite: Consent of instructor.
Special topics are selected according to the needs of students requiring material not covered in regular listings. The emphasis is on laboratory projects. (Offered both semesters.)
Variable Level.

CHM 199 Cooperative Chemistry Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory chemistry occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

CHM 299 Cooperative Chemistry Training / 3 sem. hrs.
A supervised cooperative work program for students in a chemistry occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

COMMUNICATIVE ARTS

COM 1 Writing I / 3 sem. hrs.
An introduction to the excitement of good writing with emphasis on the technique and practice of description, explanation and argument. Sections designed as COM 1U have the same objectives but offer a choice of units at the same hour in different locations. Units include a review of fundamental skills, essay writing and journal. Designed for transfer credit.
(Offered both semesters.)

COM 2 Writing II / 3 sem. hrs.
☐ Prerequisite: COM 1.
This course continues practice in writing with emphasis on longer and more analytical compositions including a research paper. Readings include fiction, poetry, drama and non-fiction. Sections designed as COM 2U offer a choice of units at the same hour in different locations. Designed for transfer credit.
(Offered both semesters.)

COM 4 Technical Communications / 3 sem. hrs.
☐ Prerequisite: COM 2 or consent of instructor.
Basic techniques of writing long and short reports, abstracts, memos and other forms required in scientific and technical occupations. The course is structured to allow students to work on writings required in courses and in future occupations.
(Offered both semesters.)

COM 5 Imaginative Writing — Poetry / 3 sem. hrs.
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 COM 2. This course may be taken as COM 55 for non-transfer credit. (Offered both semesters.)

COM 6 Imaginative Writing — Short Story / 3 sem. hrs.
Introduction to the techniques used in contemporary short fiction; study of selected short fiction with practice in the separate elements of technique through short exercises and writing of original manuscripts. For transfer credit, students must have completed COM 2. This course may be taken as COM 66 for non-transfer credit. (Offered both semesters.)

COM 20 Advanced Writing / 3 sem. hrs.
☐ Prerequisite: COM 2.
A second year college level course offering extensive practice in writing various forms such as essays, reports, journals and interviews. (Offered both semesters.)

COM 50 Practical Communications / 3 sem. hrs.
Practice in effective everyday communication skills. Individual career needs are discussed. Then stressed are assignments designed to meet them. (Offered both semesters.)

COM 54 Technical Communications / 3 sem. hrs.
Offered concurrently with COM 4 for those students not required to write a long technical paper. (Offered both semesters.)

COM 55 Imaginative Writing — Poetry / 3 sem. hrs.
Offered concurrently with COM 5 but not designed for transfer credit. (Offered both semesters.)

COM 62 Literary Magazine Workshop / 3 sem. hrs.
A laboratory course in which students edit, design, layout and produce at least one literary publication of student work in each semester. (Offered both semesters.)

COM 66 Imaginative Writing — Short Story / 3 sem. hrs.
Offered concurrently with COM 6 but not designed for transfer credit. (Offered both semesters.)

COM 70 Developmental Writing / 3 sem. hrs.
Offered concurrently with COM 1U, this course consists of units in fundamental skills including grammar and usage, organization and development as well as a variety of other units to meet the personal or occupational needs of students. (Offered both semesters.)

COM 98 Dramatic Writing / 3 sem. hrs.
Study and practice of the techniques of writing for actors with emphasis on the one-act play. (Offered any semester in which at least 15 students enroll.)

COM 99 Writing Children's Books / 3 sem. hrs.
A workshop-lecture course in which techniques of writing for children are discussed and practiced. Each student is required to complete one fiction or non-fiction manuscript of 2,000 words or less. (Offered any semester in which at least 15 students enroll.)

COM 199 Cooperative Communicative Arts Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory communicative arts occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

COM 299 Cooperative Communicative Arts Training / 3 sem. hrs.
A supervised cooperative work program for students in a communicative arts occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

COMPUTER SCIENCE

CSC 40 Fortran IV Programming / 1 to 3 sem. hrs.
Application of programming to the numerical solution of problems. Includes flowcharting, block diagramming, documentation and writing of programs. Problems are suited to business, engineering or math, depending upon students' objectives. First half of course satisfies the one unit transfer credit. (Same as Mathematics 40.) (Offered both semesters.)
First Year Level.

CSC 43 Advanced Computer Science — Mathematics / 3 sem. hrs.
(Same as Mathematics 43.)

CSC 47 Introduction to Computers / 3 sem. hrs.
Establishes the relationship of computer to manual, mechanized and unit-record systems. Introduces concepts of computer configurations, stored program, flow charting, block diagramming and documentation. Business problems will be programmed in Report Program Generator Language. (Offered both semesters.)
First Year Level.

CSC 50 Survey of Data Processing / 3 sem. hrs.
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 relationship to computers. Not for programming or engineering majors. (Offered both semesters.)

CSC 51 Introduction to Numerical Control / 2 sem. hrs.
(Same as Tool and Machine Technology 51.)

CSC 52 Key Punch, Data Entry and Procedures / 3 sem. hrs.
☐ Prerequisite: Typing speed 40 wpm or consent of instructor.
Student learns to create and use program drum cards, to punch numeric and alphameric data, and computer program formats. Both the keypunch and verifier are learned, with stress on high volume/low error rates. Other methods of data entry are presented with controls and procedures in a keypunch department. (Offered both semesters.)
First Year Level.

CSC 53 Advanced Key Punch / 3 sem. hrs.
☐ Prerequisite: CSC 52 or consent of instructor.
Course provides further practice to increase skills for job placement. Includes punching of specialized and unusual data, other data entry machines, estimating job costs for customers, ordering of materials and supplies, and supervision activities. (Offered both semesters.)
First Year Level.

CSC 56 Computer Operations / 3 sem. hrs.
Instruction and lab experience in operations of a computer covering tape, disk, printer, reader-punch, console and in-house role of the operations section including scheduling of jobs. Hands on training in at least one operating system is required. (Offered both semesters.)
First Year Level.

CSC 58 Job Stream Concepts and Operations / 3 sem. hrs.
☐ Prerequisite: CSC 47, 56.
A study of control statements and functions needed for computer operation. Multi-programming considerations, system flow, device assignment, labels on tape and disk, utility programs, and linkage editing are covered. Hands-on operation required. (Offered both semesters.)
First Year Level.

CSC 60 COBOL Programming / 3 sem. hrs.
☐ Prerequisite: CSC 47 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. (Offered both semesters.)
First Year Level.

CSC 62 Advanced Programming Concepts / 4 sem. hrs.
☐ Prerequisite: CSC 40 or 60.
A comprehensive study and practice of writing programs in a high level language such as COBOL, RPG, FORTRAN or PL/1. The student selects his language for the semester. Programming techniques to utilize auxiliary storage devices, file organization and access methods are included. (Can be repeated for credit.) (Offered both semesters.)

CSC 64 Numerical Controlled Machines I / 3 sem. hrs.
(Same as Tool and Machine Technology 64.)

CSC 68 Data Processing Projects I / 1 to 5 sem. hrs.
☐ Prerequisite: Consent of instructor.
Topics covered include applying for employment, resume writing, interviewing, work standards and job attitudes. (1 sem. hr.) Additional credit is given for practical work experience on assigned data processing projects. (Offered both semesters.)
First Year Level.

CSC 70 Assembly Language Programming / 3 sem. hrs.
☐ Prerequisite: CSC 47 or consent of instructor.
A study of an Assembly Level language and its relationship to machine language. Emphasis on Standard and Decimal instruction sets, sub-routine control and linkage. Debugging techniques and basic input/output control system applications are covered. Lab experience is provided. (Offered both semesters.)
Second Year Level.

CSC 74 File Management and IOCS / 4 sem. hrs.
☐ Prerequisite: CSC 70 or consent of instructor.
Data organization and file management techniques with IOCS applications are thoroughly explored. Interaction of the operating system and multiprogramming considerations are covered. (Offered in the Spring.)
Second Year Level.

CSC 76 Operating Systems / 3 sem. hrs.
☐ Prerequisite: CSC 70 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. The class will work through an actual generation of an operating system. (Offered in the Fall.)
Second Year Level.

CSC 77 Numerical Controlled Machines II / 3 sem. hrs.
(Same as Tool and Machine Technology 77.)

CSC 80 Systems Analysis and Design I / 3 sem. hrs.
☐ Prerequisite: CSC 60 or 62 or 70 or consent of instructor.
A case study using the tools of systems analysis; card design, printer layouts, specifications for auxiliary storage devices, levels of system design, a system/program narrative, interviewing techniques, documentation and control. A project is required of each student. (Offered in the Fall.)
Second Year Level.

CSC 81 Systems Analysis and Design II / 3 sem. hrs.
☐ Prerequisite: CSC 80.
Emphasis is on the need of management information for decision making and control, and an understanding of the place of electronic data processing in this environment. Students select topics from the field as their projects. (Offered in the Spring.)
Second Year Level.

CSC 90 Systems Programming Theory / 3 sem. hrs.
☐ Prerequisite: CSC 76 or consent of instructor.
The writing of compilers, operating systems and utility programs. Sorting and timing techniques included. (Offered in the Spring.)
Second Year Level.

CSC 94 Teleprocessing Concepts / 3 sem. hrs.
☐ Prerequisite: CSC 74, 81 or consent of instructor.
Topics covered are terminology of teleprocessing systems, hardware characteristics, considerations of direct access, backup and recovery procedures, buffering and queuing techniques. (Offered in the Spring.)
Second Year Level.

CSC 98 Data Processing Projects II / 1 to 5 sem. hrs.
☐ Prerequisite: Consent of instructor.
Topics covered include applying for employment, resume writing, interviewing, work standards and job attitudes. (1 sem. hr.) Additional credit is given for practical work experience on assigned data processing projects. (Offered both semesters.)
Second Year Level.

CSC 199 Cooperative Computer Science Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory computer science occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

CSC 299 Cooperative Computer Science Training / 3 sem. hrs.
A supervised cooperative work program for students in a computer science occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

CORRECTIONS

COR 78 Pre-Disposition Reports / 3 sem. hrs.
☐ Prerequisite: COR 102 or consent of instructor.
A study of specific techniques and procedures used in interviewing and developing pre-hearing reports. (Offered in the Fall.)

COR 80 The Prison Society / 3 sem. hrs.
Course deals with the prison's social structure and its relationship to the official world that contains it. Topics include the subcultures of deviance; life style and informal organization among prisoners (internal leadership, commerce and law); rehabilitation and violence. (Offered in the Spring.)

COR 82 Delinquency Control / 3 sem. hrs.
A survey of the nature and extent of crime and delinquency with approaches to causation, apprehension, control and treatment. (Offered in the Spring.)

COR 84 Juvenile Procedures / 3 sem. hrs.
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. (Same as Law Enforcement 84.) (Offered both semesters.)
Second Year Level.

COR 102 Introduction to Corrections / 3 sem. hrs.
Dealt with are institutional and correctional services available in the community; theories and prison systems designed to correct or prevent criminal and delinquent behavior; police, courts, prisons, parole and probation. (Same as Law Enforcement 102.) (Offered both semesters.)
First Year Level.

COR 199 Cooperative Corrections Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory corrections occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

COR 299 Cooperative Corrections Training / 3 sem. hrs.
A supervised cooperative work program for students in a corrections occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

DENTAL ASSISTING

DAT 61 Introduction to Dental Assisting / 3 sem. hrs.
Component I — Designed to help students understand the history of the profession and the variety of areas of dental practice. Also included are health and grooming, dental hygiene, job opportunities and demands. Component II — The object of this course is to enable students to develop a knowledge of basic science as it relates to dentistry; about body structure, tissue and tooth development; methods of sterilization; how to select and perform sterilization of instruments and equipment. (Offered in the Fall.)

DAT 62 Dental Assisting I / 3 sem. hrs.
Students learn dental terminology and morphology of the human dentition; prepare patients for operative procedures; select instruments used in various operative procedures; learn to demonstrate and maintain proper care of dental and laboratory equipment. (Offered in the Fall.)

DAT 63 Oral Radiography / 3 sem. hrs.
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. (Offered in the Fall.)

DAT 64 Dental Materials / 3 sem. hrs.
Course enables students to understand the chemical and physical properties of dental materials; learn the use of materials in specific operative procedures; understand units of measure and use of various measuring devices; use and maintenance of all related equipment. (Offered in the Fall.)

DAT 65 Clinical Procedures I / 3 sem. hrs.
Students apply their acquired skill of routine and special procedures in dental assisting under the direct supervision of a dentist and the faculty. (Offered in the Fall.)

DAT 66 Dental Assisting II / 2 sem. hrs.
Students learn to administer first aid in emergency situations; classifications of drugs and methods of administration; normal effects of drugs and anesthetics used in dentistry; etiology and control of dental caries; an understanding of common developmental anomalies of the human dentition; an understanding of nutrition and how it affects dental and total health. (Offered in the Spring.)

DAT 67 Dental Assisting III / 5 sem. hrs.
Students demonstrate the use of armamentaria for specialty procedures; identify terminology characteristics of each area of dental practice; maintain dental office records and manage appointment schedules; learn to order and keep a running inventory of supplies; learn dental laboratory procedures. (Offered in the Spring.)

DAT 68 Clinical Procedures II / 6 sem. hrs.
A continuation of DAT 65. Students apply advanced skills in private dental offices under the direct supervision of the dentist and instructor.

DRAFTING

DFT 55 Technical Drafting I / 3 sem. hrs.
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. (Offered both semesters.)
First Year Level.

DFT 56 Technical Drafting II / 3 sem. hrs.
☐ Prerequisite: DFT 55.
A continuation of Drafting 55, furthering the skills of the student. 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. (Offered both semesters.)
First Year Level.

DFT 57 Technical Drafting III / 3 sem. hrs.
☐ Prerequisite: DFT 56.
This course follows Drafting 56 and covers additional problems in mechanical drafting. The student is given more advanced problems, typical of industry, to develop skill, accuracy and speed. (Offered in the Fall.)
Second Year Level.

DFT 58 Tool Design / 4 sem. hrs.
☐ Prerequisite: ENG 2 or DFT 55.
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. (Offered in the Spring.)
Second Year Level.

DFT 61 Construction Drafting I / 3 sem. hrs.
An introduction to drafting and blueprint reading. Plot plans, floor plans, elevations, sections, details, structural, plumbing, heating, ventilating and air conditioning, and electrical plans are involved in developing a basic understanding of construction drawings and drafting techniques. (Offered both semesters.)

DFT 62 Construction Drafting II / 3 sem. hrs.
☐ Prerequisite: DFT 61.
Introduces the development of a set of residential and wood frame construction working drawings from a given sketch. (Offered both semesters.)

DFT 63 Construction Drafting III/ 3 sem. hrs.
☐ Prerequisite: DFT 62.
A continuation of DFT 62, developing construction drawings for a masonry and wood frame residence from house sketches selected by students. (Offered both semesters.)

DFT 64 Construction Drafting IV / 3 sem. hrs.
☐ Prerequisite: DFT 63.
A continuation of DFT 63, developing construction drawings for a medium size steel or concrete building. (Offered both semesters.)

DFT 65 Building Utilities and Site Work / 3 sem. hrs.
☐ Prerequisite: DFT 62.
The basic concepts for building service support systems and site development. (Offered in the Spring.)

DFT 66–67 Construction Determinants, I, II / 3-3 sem. hrs.
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 66 offered in the Fall, DFT 67 in the Spring.)

DFT 71 Technical Illustration / 2 sem. hrs.
☐ Prerequisite: DFT 55, ENG 2.
Course provides skills in producing drawings for technical publications, advertising art studios and production illustrations. Freehand sketching of mechanical parts and assemblies and isometric, oblique and perspective drawings, including air brush experience, are covered. (Offered in the Fall.)
Second Year Level.

DFT 73 Electronic Drafting / 3 sem. hrs.
☐ Prerequisite: DFT 65.
Offered primarily for the drafting technician student. Instruction stresses schematics, logic diagrams, printed circuit and integrated circuit layout, including taping. (Offered in the Fall.)
First Year Level.

DFT 76 Drafting for Machine Technology I / 3 sem. hrs.
☐ Prerequisite: DFT 55, MTH 80 or consent of instructor.
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. (Offered in the Spring.)
First Year Level.

DFT 77 Electro-Mechanical Design / 4 sem. hrs.
☐ Prerequisite: DFT 73.
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. (Offered in the Spring.)
Second Year Level.

DFT 99 Independent Study / 1 to 3 sem. hrs.
Independent study or a special project not included in the regular courses. The student is required to obtain a sponsoring instructor in this area, establish objectives, a method of procedure and a method of evaluation. (Offered both semesters.)

DFT 199 Cooperative Drafting Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory drafting occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

DFT 299 Cooperative Drafting Training / 3 sem. hrs.
A supervised cooperative work program for students in a drafting occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

DRAMA

DRA 1 Independent Studies / 1 to 4 sem. hrs.
Students pursue independent study under guidance of an instructor. (Offered both semesters.)

DRA 5–6 Introduction to Acting / 3-3 sem. hrs.
☐ Prerequisite: DRA 5 for DRA 6.
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 5 offered both semesters, DRA 6 in the Spring.)
First Year Level.

DRA 9 Ethnic Theatre / 1 to 4 sem. hrs.
Experience in and study of theater as a social communication, including Mexican-American, Black and American Indian forms of dramatic presentation. (Offered both semesters.)
First or Second Year Level.

DRA 9 Teatro del Pueblo / 3 sem. hrs.
Este curso mostrará la estudiante la técnica y las diversas faces que ha tenido el teatro históricamente. Se pondra gran empeño en poner en marcha la práctica junto a la teoria para que los estudiantes desarrollen sus facultades artisticas. Para quienes participen como actores se otorgarán de una a dos unidades como crédito adicional si se presenta la obra al público. Este curso se ofrece en colaboración con El Teatro de Pueblo, Inc. de Tucson, Arizona. (Se ofrece en el otoño.)

DRA 15 Make-Up / 1 sem. hr.
The study and practice of straight and character make-up under various conditions. Also, the history of make-up and masks in various cultures. (Offered in the Fall.)
First or Second Year Level.

DRA 20-21 Stagecraft and Production / 2-2 sem. hrs.
Study and experience in the technical organization of the theater, stage management, scenery construction and painting, basic drafting, special effects, and lighting mounting and operations (DRA 20-21 need not be taken in sequence). (DRA 20 offered in the Fall, DRA 21 in the Spring.)
First Year Level.

DRA 22 Advanced Stagecraft / 2 sem. hrs.
□ Prerequisite: DRA 20.
Study and application of graphic skills and design elements of theatrical production. May be taken concurrently with DRA 21. (Offered in the Spring.)
Second Year Level.

DRA 40-41 History of the Theater / 3-3 sem. hrs.
A study of theater and drama from primitive rituals to the present, including European, Oriental, African and American cultural influences on the development of various dramatic levels. (DRA 40 offered in the Fall, DRA 41 in the Spring.)

DRA 46 Children's Theater / 3 sem. hrs.
A study and exploration of the techniques and literature of children's theater and creative dramatics, including the development of performances for and with children. (Offered in the Fall.)

DRA 48-49 Intermediate Acting / 3-3 sem. hrs.
The theories and experiences in creating sustained and logical character portrayals, using all types of dramatic literature from various cultures. (DRA 48 offered in the Fall, DRA 49 in the Spring.)
Second Year Level.

EARTH SCIENCES

ESC 1 Physical Geography / 4 sem. hrs.
The physical elements — weather, climate, vegetation, landforms and soils — are interrelated, forming patterns of great importance to man. This course is about those elements, their interrelationships, the resulting patterns and why they are important. (3 hours lecture, 3 hours lab.) (Offered in the Fall.)
First or Second Year Level.

ESC 2 Cultural Geography / 4 sem. hrs.
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. (3 hours lecture, 3 hours lab.) (Offered in the Spring.)
First or Second Year Level.

ESC 12 Geology for Education Majors / 3 sem. hrs.
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 12 if a student has credit for either ESC 20 or 21. (2 hours lecture, 3 hours lab.) (Offered in the Spring.)

ESC 15 Human Ecology / 4 sem. hrs.
Focuses on the question of survival for mankind and other life forms by exploring both present problems and alternatives for the future. Lecture-discussion and field trips. (Same as Sociology and Life Sciences 15.) (Offered both semesters.)
First or Second Year Level.

ESC 20 Introductory Geology I / 4 sem. hrs.
An introduction to the physical aspects of the earth's crust; rock and minerals, their relationship to one another, and the surface and subsurface processes that operate on and in the earth. (3 hours lecture, 3 hours lab.) (Offered both semesters.)
First or Second Year Level.

ESC 21 Introductory Geology II / 4 sem. hrs.
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. (3 hours lecture, 3 hours lab.) (Offered both semesters.)
First or Second Year Level.

ESC 60 Principles of Lapidary / 3 sem. hrs.
A practical laboratory course in the identification, polishing and mounting of semi-precious gem materials. (Same as Art 60.) (Offered both semesters.)

ESC 199 Cooperative Earth Sciences Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory earth sciences occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

ESC 299 Cooperative Earth Sciences Training / 3 sem. hrs.
A supervised cooperative work program for students in an earth sciences occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

ECONOMICS

ECO 1 Economic History / 3 sem. hrs.
The ideas of historic theorists such as Smith, Ricardo, Marx, J. S. Mill, Veblen and Keynes are surveyed as a basis of understanding modern economics. (Offered in the Fall.)

ECO 2 Introduction to Microeconomics / 3 sem. hrs.
The role of prices in the allocation of economic resources; market structures and the distribution of income are analyzed with specific emphasis given to the individual and the firm in their economic environment. (Offered both semesters.)
First Year Level.

ECO 3 Introduction to Macroeconomics / 3 sem. hrs.
The relationship between national income, the level of employment, the monetary system and the foreign trade sector are analyzed from a policy maker's viewpoint. (Offered both semesters.)
First Year Level.

ECO 4 Topics in Contemporary Economics / 3 sem. hrs.
Independent studies on specific economic topics based on student interest. (Offered in the Spring.)
Second Year Level.

ELECTRONICS

(Electronics courses are in the process of being restructured and information on the courses can be obtained from the electronics faculty.)

EMERGENCY MEDICAL TECHNOLOGY

EMT 51 Emergency Medical Technology / 6 sem. hrs.
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. (Offered both semesters.)

ENGINEERING

ENG 2 Engineering Graphics / 3 sem. hrs.
☐ Prerequisite: DFT 55 or equivalent.
Freehand technical sketching and instrument working drawings. Principles of projection are reviewed, and basic descriptive geometry is studied in its application to solving engineering space problems. (Offered both semesters.)

ENG 14 Engineering Mechanics / 3 sem. hrs.
☐ Prerequisite: PHY 10, MTH 31 (May be taken concurrently.)
Vector algebra, calculus, equilibrium, kinematics, momentum, energy concepts and equivalent force systems. (Offered in the Fall.)
Second Year Level.

ENG 17 Mechanics of Materials / 3 sem. hrs.
☐ Prerequisite: ENG 14.
Materials behavior, relationships between external forces acting on inelastic and elastic bodies and the resulting behavior, stress and strain, and combined stresses. (Offered in the Spring.)
Second Year Level.

ENG 21 Elementary Surveying / 3 sem. hrs.
☐ Prerequisite: MTH 20, 24 or 29.
Course includes measurement of horizontal distances, use of surveying instruments, angle measurements, traverse surveys and computations, topographics, government land surveys and solar observations. (Offered both semesters.)

ENG 70 Construction Surveying / 3 sem. hrs.
☐ Prerequisite: MTH 80, 81 or consent of instructor.
Course includes the use of surveying instruments, measurement of horizontal distances, leveling, angle measurements, traversing, locating details, stadia surveys, topographic mapping and grade staking. (Offered in the Fall.)

ENG 199 Cooperative Engineering Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory engineering occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

ENG 299 Cooperative Engineering Training / 3 sem. hrs.
A supervised cooperative work program for students in an engineering occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

ENGLISH AS A SECOND LANGUAGE

ESL 50 series / 6 sem. hrs.
Offered for non-native speakers of English and bilingual students. ESL is an intensive study for acquiring and improving basic skills in speaking, listening, reading and writing the English language. Diagnostic testing and teacher evaluation determine each student's beginning level. Classes meet four days a week, but special schedules can be arranged for students who would otherwise have a conflict.
(Offered both semesters.)

EXPLORATORY

EXP 50 Potpourri / 3 sem. hrs.
From auto mechanics to Zen meditation. An exploration with area experts of seven subjects selected by the class.

EXP 51 Social Science Survey / 1 to 4 sem. hrs.
Includes units from the Social or Behavioral Sciences selected by the student. (Continuous enrollment.)

EXP 60 People / 1 sem. hr.
Learning teams give members a chance to explore ideas and experiences in many different areas of study, work, cultural awareness and community involvement. (A student may receive up to four units of credit, with one per semester.)

EXP 60 La Gente / 1 sem. hr.
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. Se puede repetir este curso hasta un máximo de cuatro unidades.

FIRE SCIENCE

FSC 50 Basic Training — Fire Fighter / 3 sem. hrs.
☐ 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. (Offered both semesters.)

FSC 51 Introduction to Fire Science / 3 sem. hrs.
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. (Offered both semesters.)

FSC 52 Fundamentals of Fire Prevention / 3 sem. hrs.
Fire prevention surveys; "selling" the service to businessmen; helping the businessman to stay in business; public relations; and the application of fire prevention codes. (Offered both semesters.)

FSC 53 Hazardous Materials I / 3 sem. hrs.
☐ Prerequisite: FSC 51, 52, MTH 70, CHM 1 or consent of instructor.
A study of the impact of the chemical population explosion upon the human explosion and particularly the fireman; how to identify, classify and handle the most common flammable, explosive, reactive and toxic materials; where they are likely to be found and how to cope with the various problems they present. (Offered on demand.)

FSC 54 Advanced Fire Prevention / 3 sem. hrs.

☐ Prerequisite: FSC 51, 52, MTH 70, CHM 1 or consent of instructor.

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. (Offered on demand.)

FSC 61 Hazardous Materials II / 3 sem. hrs.

☐ Prerequisite: FSC 53, PHY 2 or consent of instructor.

A continuation of FSC 53, covering the less common, newer and least known materials that appear in our environment from time to time. (Offered on demand.)

FSC 62 Hydraulics and Fire Suppression / 3 sem. hrs.

☐ Prerequisite: FSC 51, 52, PHY 2 or consent of instructor.

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 systems; fire flow requirements and organization for fire suppression. (Offered on demand.)

FSC 63 Fire Apparatus and Equipment / 3 sem. hrs.

☐ Prerequisite: FSC 51, 52, PHY 2 or consent of instructor.

Automotive apparatus; pumpers, aerial ladders, lift platforms, water towers, hose wagons, transports and utility vehicles; auxiliary heavy mechanical equipment and appliances; generators, compressors, rescue and forcible entry tools and cutting torches. (Offered on demand.)

FSC 64 Fire Protection Systems / 3 sem. hrs.

☐ Prerequisite: FSC 62, 63 or consent of instructor.

Portable and fixed fire extinguishing equipment, automatic sprinkler and deluge systems; rate of temperature rise and smoke detecting devices and alarm systems. (Offered on demand.)

FSC 65 Building Construction for Fire Protection / 3 sem. hrs.

☐ Prerequisite: FSC 62, 63, HUM 10 or consent of instructor.

How building design affects fire travel; relation of fire load to propagation of flame; non-conforming structures; application of building codes. (Offered on demand.)

FSC 66 Fire Suppression, Strategy and Tactics / 3 sem. hrs.

☐ Prerequisite: FSC 62, 63 or consent of instructor.

Planning an attack to fit the problem; revising the plan of attack to meet changing situations.

FSC 67 Rescue Practices and First Aid / 3 sem. hrs.

Basic training in handling emergency situations. (Offered on demand.)

FSC 70 Topics in Fire Science / 1 to 4 sem. hrs.

Special topics are selected according to the needs of students requiring material not covered in regular listings. (Offered on demand.)

FSC 71 Public Safety Laws / 3 sem. hrs.

Laws relating to the public safety profession; legal duties and responsibilities of public safety employes. (Offered on demand.)

FRENCH

FRE 1-2 Elementary French / 4-4 sem. hrs.

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 1 offered in the Fall, FRE 2 in the Spring.) First Year Level.

FRE 3-4 Intermediate French / 4-4 sem. hrs.

☐ Prerequisite: FRE 1-2.

A review of basic French skills is supplemented by regular assignment of compositions, in French, and a variety of readings. As in the introductory course, only French is used. (FRE 3 offered in the Fall, FRE 4 in the Spring.)

GERMAN

GER 1-2 Beginning German / 4-4 sem. hrs.

☐ Prerequisite: GER 1 or one year high school German for GER 2.

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 2. A language laboratory is used. (GER 1 offered in the Fall, GER 2 in the Spring.)

GER 3-4 Intermediate German / 4-4 sem. hrs.

☐ Prerequisite: GER 2 or equivalent for GER 3. GER 3 or equivalent for GER 4.

Intensive reading, small group discussions, frequent writing assignments, and language laboratory assignments are combined with individualized instruction to develop a deeper understanding of the German language and culture. (GER 3 is offered in the Fall, GER 4 in the Spring.)

GER 40 Independent Study / 1 to 4 sem. hrs.

☐ Prerequisite: Consent of instructor.

Students pursue independent study in literature and grammar under guidance of a faculty member.

GRAPHICS

GTC 70 Offset Printing / 3 sem. hrs.

Practical experiences in offset layout, camera work, stripping, platemaking, press work and bindery work.

GTC 80 Commercial Photography / 3 sem. hrs.

Designed for the advanced student, the course includes camera techniques, film characteristics and printing techniques. Students, after completing the basic part, may select an in-depth study of any phase of the photographic process such as flash, filters, composition, advanced printing techniques, toning, hyperfocal distance, supplementary lenses and portraits.

HEALTH EDUCATION

HED 36 Introduction to Health Science / 3 sem. hrs.
Students may select topics such as traumatic injuries, communicable diseases, nutrition, mental health, environmental health problems, or socio-medical problems such as venereal diseases, drug use and abuse, alcoholism, abortion. The focus is on preventive health measures and public health services. (Offered both semesters.)

HED 37 Preparation for Teaching Personal and Public Health / 3 sem. hrs.
☐ Prerequisite: HED 36 or consent of instructor.
Course content may be similar to HED 36, but the focus is on learning to use methods and materials in teaching health topics to different age groups. (Offered in the Fall.)

HEALTH SCIENCES

HCA 53 Survey of Health Care / 1 sem. hr.
An exploratory health course and open only to exploratory study students. Students are acquainted with the meaning of health and the concept of comprehensive health care while exploring the roles of health careers. (Offered both semesters.)

HCA 54 Introduction to Health Care / 2 to 3 sem. hrs.
An introductory health course representing the nucleus of the Health Science 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. (Offered both semesters.)

HCA 99 Special Studies in Health Sciences / Sem. hrs. to be arranged
☐ Prerequisite: Consent of instructor.
For special health related projects, permitting students to conduct research and experimental work. Results of projects must be presented in manuscript form. (Offered both semesters.)

HISTORY

HIS 1-2 Introduction to Western Civilization / 3-3 sem. hrs.
Surveys the historic development of Western man, going through the prehistoric age, ancient Greece, Rome, early Middle Ages, Renaissance to the 20th century. (Offered both semesters.) First or Second Year Level.

HIS 3-4 History of the United States / 3-3 sem. hrs.
Review of history from Jamestown to the present, including the founding and development of American democracy, minority participation in making of the country, and the role of the U.S. in world affairs. (Continuous enrollment both semesters.)
First Year Level.

HIS 5-6 American Civilization / 3-3 sem. hrs.
A broad look, through many units, at the American experience — with an emphasis on the cultural aspects. (Continuous enrollment both semesters.)

HIS 7 Papago History and Culture / 3 sem. hrs.
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 Anthropology 7.) (Offered in the Spring.)
First or Second Year Level.

HIS 8 Independent Studies in History / 2 to 4 sem. hrs.
☐ Prerequisite: Consent of instructor.
Independent history studies or projects arranged by the instructor. (Offered both semesters.)
Second Year Level.

HIS 9 History and Culture of the Mexican-American in the Southwest / 3 sem. hrs.
Who is the Mexican-American? What is his cultural heritage, and what has happened to it in the United States? (Same as Anthropology 9.) (Offered both semesters.)
First Year Level.

HIS 10 History of Arizona / 3 sem. hrs.
This course looks at Arizona history as a part of the Arizona-Sonoran Desert area, moving from the pre-Columbian period and through the Spanish conquest, Mexican Republic, U.S. territory and statehood. (Offered in the Fall.)

HIS 12 Afro-American History and Peoples / 3 sem. hrs.
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 Anthropology 12.) (Offered both semesters.)
First or Second Year Level.

HIS 13 History and Peoples of Africa / 3 sem. hrs.
A survey of the political and cultural history of Africa, south of the Sahara. (Same as Anthropology 13.) (Offered both semesters.)

HIS 14 History and Peoples of Latin America / 3 sem. hrs.
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 Anthropology 14.) (Offered both semesters.)
First or Second Year Level.

HIS 16-17 History of Mexico / 3-3 sem. hrs.
The student moves from the pre-Columbian era, through the Spanish conquest, a century of political and social upheaval, to the nation of social and economic stability. (Offered both semesters.)
First or Second Year Level.

HIS 16-17 Historia de México / 3-3 sem. hrs.
Historia de México. Se estudia una panorámica de la época precolonial, colonial y contemporanea. (Se ofrece los dos semestres.)

HIS 49 Mexican-American Culture and Thought / 3 sem. hrs.
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 "Aztlan." (Offered in the Fall.)
First or Second Year Level.

HOME ECONOMICS

HEC 2 Food Study I / 3 sem. hrs.
The basic principles of cooking and methods of preparation, composition and nutritive values. Lecture and lab. Proficiency test permitted. (Offered both semesters.)

HEC 3 Food Study II / 3 sem. hrs.
A continuation of HEC 2 with emphasis on the preparation of flour mixtures, meats and sugars. Lecture and lab. (Offered both semesters.)

HEC 5 Basic Clothing Construction / 3 sem. hrs.
The fundamental principles of clothing construction, selection of fabrics and styles using commercial patterns. Lecture and lab. Proficiency test permitted. (Offered both semesters.)

HEC 6 Home Management / 3 sem. hrs.
Basic principles and techniques of home management processes and their application to individual and family resources. Lecture course. (Offered both semesters.)

HEC 7 Human Development and Relations / 3 sem. hrs.
An interdisciplinary and intercultural approach to human development and relationships. (Offered both semesters.)

HEC 9 Home Economics Profession / 3 sem. hrs.
The history of Home Economics, purposes, problems and trends plus an exploration of professional opportunities in the field. Required of all transfer Home Economics majors. (Offered in the Fall.)

HEC 12 Nutrition / 3 sem. hrs.
The principles of human nutrition and its relationship to diet, health and cultural patterns. (Offered both semesters.)

HEC 15 Advanced Clothing Construction / 3 sem. hrs.
☐ Prerequisite: HEC 5 or proficiency test.
Advanced clothing construction techniques, selection of fabrics and patterns. Commercial patterns are used. Lecture and lab. (Offered both semesters.)

HEC 17 Child Growth and Development / 3 sem. hrs.
A study of the growth, development and acculturation of the child from conception through adolescence. (Same as Recreation 17.) (Offered both semesters.)

HEC 17 El Desarrollo del Niño / 3 sem. hrs.
Estudio del crecimiento, desarrollo y aculturacion del ser humano desde la concepción hasta la niñez. (Se ofrece los dos semestres.)

HEC 19 Applied Dress Design / 3 sem. hrs.
The flat pattern method of pattern making is taught with emphasis on engineering, not fashion design. Lecture and lab. (Offered in the Fall.)

HEC 22 Meal Management / 3 sem. hrs.
☐ Prerequisite: HEC 2, 3 or consent of instructor.
The planning, preparing and serving of meals with emphasis on cultural patterns and management of resources. Lecture and lab. (Offered in the Spring.)

HEC 25 Home Furnishings / 3 sem. hrs.
The study of interior design both as a functional purpose and the social, aesthetic, economic and psychological effects on individuals. (Offered both semesters.)

HEC 27 Trends in Marriage and Family Relations / 3 sem. hrs.
A study of the individual, marriage and the family in today's social setting. (Offered in the Fall.)

HEC 32 Quantity Foods / 3 sem. hrs.
☐ Prerequisite: HEC 2, 3 or consent of instructor.
Quantity food preparation, service and institutional equipment with special emphasis on management of time. Lecture and lab. (Offered in the Spring.)

HEC 35 Clothing Selection / 3 sem. hrs.
A consumer analysis of clothing design, construction and cost based on social, aesthetic and individual needs. (Offered in the Fall.)

HEC 42 Nutrition in Growth and Development / 3 sem. hrs.
☐ Prerequisite: HEC 12.
The application of basic nutritional principles to meet the physical and emotional needs of children. Lecture and lab. (Offered in the Fall.)

HEC 45 Textiles / 3 sem. hrs.
The technology of textile fibers, yarns, construction and finishes with a consumer focus on economic, aesthetic, service and maintenance aspects. Lecture and lab. (Offered in the Spring.)

HEC 52 Food for Children / 3 sem. hrs.
☐ Prerequisite: HEC 12.
The application of basic nutritional principles in meeting the physical and emotional needs of children. This course is applicable to child care agencies with emphasis on a multicultural, child centered approach. Lecture and lab. (Offered in the Fall.)

HEC 54 Tailoring / 3 sem. hrs.
Course stresses custom and semi-commercial tailoring techniques with an emphasis on natural fibers. Experiments with recent developments in construction methods are included. Lecture and lab. (Offered in the Spring.)

HEC 55 Alteration and Designing / 3 sem. hrs.
The coordinated method of flat pattern alterations and basic principles of alterations on ready-to-wear. Lecture and lab. (Offered both semesters.)

HEC 57 Literature / Language Arts for Young Children / 3 sem. hrs.
An investigation of knowing, feeling and communication as the common base for creative growth of children through language development. (Offered in the Fall.)

HEC 58 Music / Movement for Young Children / 3 sem. hrs.
A creative approach to the role of music and movement as sensory experiences, inquiry and individual expression. (Offered in the Fall.)

HEC 64 Interior Design I / 3 sem. hrs.
A study of the basic principles of functional interior design and their application. The course caters to the serious interior design student and to the student who wishes to decorate his or her own surroundings. (Offered in the Fall.)

HEC 68 Understanding the Young Child / 3 sem. hrs.
☐ Prerequisite: HEC 17 or equivalent.
An intensive study in the understanding of children as to behavior, guidance, social and cultural influences. (Offered in the Spring.)

HEC 74 Interior Design II / 3 sem. hrs.
☐ Prerequisite: HEC 64.
A further study of the principles of functional interior design and the application of these principles. For the serious interior design student. (Offered in the Spring.)

HEC 75 Psychology of Dress / 3 sem. hrs.
A study of human behavior in relationship to clothing; the formal and informal aspects of dress, purposes and forces of society relative to dress. (Offered in the Spring.)

HEC 77 Pre-School Education / 3 sem. hrs.
A study of various philosophies, theories and methodologies of curriculum for early childhood education. Supervised field experience included. Lecture and field work. (Offered both semesters.)

HEC 78 Supervision and Administration / 3 sem. hrs.
A study of all administrative responsibilities and duties connected with management and supervision in all areas of early childhood education. (Offered in the Fall.)

HEC 79 Community Resources and Agencies / 3 sem. hrs.
☐ Prerequisite: Early Childhood Education major or consent of instructor.
A study of local community resources and agencies through investigation and field work. (Offered in the Spring.)

HEC 84 History of Fashion / 3 sem. hrs.
A study of the evolution of fashion is combined with historical events and how trends of fashion are derived. (Offered in the Fall.)

HEC 85 Fashion Design I / 3 sem. hrs.
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. (Offered in the Spring.)

HEC 87 Math and Science for Young Children / 3 sem. hrs.
An investigation of sensory experiences, inquiry and concept awareness in math and science as the common base for creative growth in children. (Offered in the Spring.)

HEC 88 Play and Art for Young Children / 3 sem. hrs.
Play and art as the common base for creative growth of children. A creative approach to sensory experiences, inquiry and concept awareness. (Offered in the Fall.)

HEC 90 Today's World / 3 sem. hrs.
A discussion of current issues on international, national and local levels and the relationship to the individual and his selected career area. (Offered in the Spring.)

HEC 94 Interior Design III / 3 sem. hrs.
☐ Prerequisite: HEC 64, 74.
The theory and practice of interior design principles. Course covers aspects of the student seeking career preparation in interior design, customer-client relationships and financial problems. (Offered in the Fall.)

HEC 95 Fashion Design II / 3 sem. hrs.
☐ Prerequisite: HEC 5, 19, 85.
Students design a pattern, select materials and construct an original garment. (Offered in the Fall.)

HEC 99 Independent Study / 1 to 6 sem. hrs.
☐ Prerequisite: Consent of instructor.
Students pursue independent study under the guidance of a home economics instructor. (Offered both semesters.)

HEC 199 Cooperative Home Economics Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory home economics occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

HEC 299 Cooperative Home Economics Training / 3 sem. hrs.
A supervised cooperative work program for students in a home economics occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

HUMANITIES

HUM 10-11 Humanities I, II / 4-4 sem. hrs.
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. (Offered both semesters.)

HUM 30 Independent Studies in Humanities / 3 sem. hrs.
Study areas to be arranged with instructor and staff. (Offered both semesters.)

HUM 31 Special Studies in Humanities and Literature / 3 sem. hrs.
Course changes each semester according to student demands. Possible areas of study include science fiction, primitive art, divination, Zen meditation, Haiku, Gandhi and non-violence, mythology, mysticism, and applications of Eastern thought for the Western world. (Offered both semesters.)

HUM 60 Early Chinese Views of Social Change / 3 sem. hrs.
This course, through a study of I Ching and Taoism, takes an unusual approach to social change. (Offered in the Spring.)

JOURNALISM

JRN 7-8 Reporting / 3-3 sem. hrs.
The gathering, selecting, evaluating and writing of news. (JRN 7 offered both semesters, JRN 8 in the Spring.)

JRN 10 Exploring Mass Media / 3 sem. hrs.
What is happening to us with TV in our homes and newspapers on our doorsteps? An evaluation of information and its sources. One major writing project to be completed by each student. (Offered both semesters.)

JRN 57 Journalism Workshop / 3 sem. hrs.
A laboratory course in which students produce the college newspaper "Community." May be taken as a non-credit activity. (Offered both semesters.)

LAW ENFORCEMENT

LEN 3 Ethics for Public Service / 3 sem. hrs.
An examination of professional codes of ethics in the fields of public management, corrections, health services, law enforcement and government. (Same as Political Science 3.) (Offered both semesters.)
First Year Level.

LEN 9 Basic Marksmanship / 1 sem. hr.
(Same as Basic Marksmanship under Recreation 9.)

LEN 12 Defensive Tactics / 2 sem. hrs.
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. (Offered both semesters.)

LEN 14 Firearms / 2 sem. hrs.
☐ 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. (Offered in the Spring.)

LEN 50 Special Problems / 1 to 6 sem. hrs.
Supervised study, projects or laboratory practice in solving special problems in police science or criminology not covered in basic curriculum. May be repeated for credit to a maximum of six units. (Offered both semesters.)

LEN 60 Industrial and Retail Security / 3 sem. hrs.
A general survey of the field of retail and industrial security. Study includes applications of techniques and basic principles. (Offered in the Fall.)
First Year Level.

LEN 71 Patrol Procedures / 3 sem. hrs.
☐ Prerequisite: LEN 78, 100 or 104, 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. (Offered both semesters.)

LEN 72 Introduction to Fingerprinting / 3 sem. hrs.
☐ Prerequisite: LEN 104 or consent of instructor.
This course is a survey of the technical terms used in fingerprinting, pattern interpretations, classification of fingerprints, searching and filing procedures. It also teaches the student the procedures for taking fingerprints. (Offered in the Fall.)

LEN 73 Crime Scene Technology / 3 sem. hrs.
☐ Prerequisite: LEN 72, 100 or 104, 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. (Offered in the Spring.)

LEN 76 Basic Criminalistics / 3 sem. hrs.
☐ Prerequisite: LEN 104 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. (Offered in the Fall.)

LEN 77 Advanced Criminalistics / 3 sem. hrs.
☐ Prerequisite: LEN 76 or consent of instructor.
Examined are the fields of firearms identification, pathology, toxicology, related matters and courtroom procedures.

LEN 78-79 Criminal Law and Administration of Justice / 3-3 sem. hrs.
The first semester covers organization and history. Also arrest, search and seizure, crimes of a common law nature and case studies. The second semester continues the law contents of the course and stresses the enforcement of criminal laws. (Offered both semesters.)

LEN 82 Police Community and Human Relations / 3 sem. hrs.
The police officer's role in getting and maintaining public support is reviewed. Also, the recognition and understanding of community problems, community action programs, method of coping with crisis situations, ethnic and minority cultures, environments and police operations in relation to them. (Offered both semesters.)

LEN 84 Juvenile Procedures / 3 sem. hrs.
(Same as Corrections 84.)

LEN 100 Introduction to Law Enforcement — Its Organization / 3 sem. hrs.
The role of the law enforcement officer in his community; the history of law enforcement agencies; police functions and practices. Career opportunities, as related to local law enforcement departments, are considered. (Offered both semesters.)
First Year Level.

LEN 102 Introduction to Corrections / 3 sem. hrs.
(Same as Corrections 102.)

LEN 104 Criminal Investigation and Report Preparation / 3 sem. hrs.
☐ Prerequisite: LEN 100 or consent of instructor.
Introduction to the fundamentals of modern criminal investigation; procedures and skills in search and investigation. conduct at 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. (Offered both semesters.)
First Year Level.

LEN 106 Police Traffic Functions — Vehicle Code / 3 sem. hrs.
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. (Offered both semesters.)
First Year Level.

LEN 108 Police Administration / 3 sem. hrs.

☐ Prerequisite: LEN 100 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.
Second Year Level.

LEN 199 Cooperative Law Enforcement Training / 3 sem. hrs.

A supervised cooperative work program for students in an exploratory law enforcement occupation for an average of 15 hours per week. Course may be repeated.
First Year Level.

LEN 299 Cooperative Law Enforcement Training / 3 sem. hrs.

A supervised cooperative work program for students in a law enforcement occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level.

LIBRARY TECHNICIAN

LMT 50 Library Resources / 3 sem. hrs.

☐ Prerequisite: MET 80, 81.
An introduction to the basic library resources: catalogs, bibliographies, indexes and reference materials. Also an introduction to periodicals and microforms.

LMT 51 Library Technical Services / 4 sem. hrs.

☐ Prerequisite: LMT 50.
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 sem. hrs.

☐ Prerequisite: LMT 50.
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 / 6 sem. hrs.

A supervised cooperative work program for students in a library technician occupation.
Second Year Level.

LIFE SCIENCES

LSC 1-2 Ecology I, II / 3 or 4 sem. hrs. per sem.

☐ Prerequisite: A year of biology or consent of instructor.
Emphasis on basic qualitative and quantitative relationships among populations and natural communities of living things, and how these relationships are affected by numbers and kinds of factors present in the physical and biological environment. Stresses the life forms of the Southwest. Laboratory involves field sampling and comparisons. Transferability based on lab credit. (LSC 1 offered in the Fall, LSC 2 in the Spring.)

LSC 3-4 General Biology I, II / 4-4 sem. hrs.

An integrated course dealing with both plants and animals. Stressed are important biological principles and problems related to the population ecology of man. Not intended for biology majors. Intended to meet 8 hours of biological science-liberal arts requirement. (Offered both semesters.)

LSC 5-6 Organismic Biology I, II / 4-4 sem. hrs.

☐ Prerequisite: CHM 3 and concurrent enrollment in CHM 4, or concurrent enrollment in CHM 3 with consent of instructor.
The study of plants and animals primarily at the organ-system of observation. Intended for biology, pre-medical, pre-veterinary and science majors. Also, possibly, pre-pharmacy and pre-dental. (Offered both semesters.)

LSC 7-8 Microbiology I, II / 4-4 sem. hrs.

☐ Prerequisite: LSC 7 for LSC 8.
Emphasis, during the first semester, is on characteristics of microbes, and the influences both of microbes on man and his environment and of man on the microbial environment. Emphasis in the second semester is toward a medical orientation dealing with infection and immunity by a variety of microbial agents on a variety of hosts. (Offered both semesters.)

LSC 10 General Genetics / 4 sem. hrs.

☐ Prerequisite: LSC 5-6, CHM 3-4, 40 and concurrent enrollment in CHM 41.
This course introduces the student planning to major in biology to the basic principles and concepts of genetics. Laboratory sections meet three hours each week.
(Offered both semesters.)
Second Year Level.

LSC 12 Biology / 4 sem. hrs.

☐ Prerequisite: CHM 5 or concurrent enrollment.
General biological principles are stressed as to their applicability to education majors and general interest students. (Offered in the Spring.)

LSC 15 Human Ecology / 4 sem. hrs.

(Same as Earth Sciences and Sociology 15.)

LSC 17 Introduction to Infectious Diseases / 2 sem. hrs.

A survey course with films and demonstrations covering the cause and control of microbial diseases. (Offered both semesters.)

LSC 20-21 Human Anatomy and Physiology / 4-4 sem. hrs.

☐ Prerequisite: REA 60 series or equivalent ability; LSC 20 for LSC 21 or consent of instructor.
Designed for health occupations and anyone interested in the structure and function of the human body. Cellular and biochemical emphasis on all body systems. (Offered both semesters.)
First or Second Year Level.

LSC 50 Principles of Human Anatomy and Physiology / 4 sem. hrs.
Designed for students in non-transfer health occupation programs. A brief survey of the structure and function of the body. (Offered both semesters.)
First Year Level.

LSC 52 Special Problems in Biology / 2 to 4 sem. hrs.
A different biological topic, of interest to the general public, is offered each semester. Topics include human genetics, desert ecology, desert plants, desert animals, and the biology of gardening. (Offered both semesters.)
General Interest Course.

LSC 56 Independent Studies / 1 to 4 sem. hrs.
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. (Offered both semesters.)
First or Second Year Level.

LSC 58 Human Biology / 4 sem. hrs.
General principles of anatomy/physiology and man's environmental interactions. Primarily for physical education majors. (Offered in the Fall.)

LSC 60 General Biology / 4 sem. hrs.
This course is for the beginning student who expresses an interest in biology either as a vocation or special interest. General biological principles are stressed. (May be offered in the Fall.)

LSC 70 Conservation of Natural Resources / 3 sem. hrs.
☐ Prerequisite: Enrollment in natural resources or park/forest service technician programs 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. (Same as Recreation 70.) (Offered in the Spring.)

LSC 71 Survey of Western Flora / 3 sem. hrs.
A survey of western flora with emphasis on local plants. Plant adaptation, distribution and environmental implications are stressed. (Same as Recreation 71.) (Offered in the Spring.)

LSC 72 Survey of Western Land Vertebrates / 3 sem. hrs.
☐ Prerequisite: Enrollment in natural resources or park/forest service technician programs or consent of instructor.
A survey of western mammals, reptiles and amphibians with emphasis on adaptations, distribution and environmental requirements. Forms arousing public interest are discussed. (Same as Recreation 72.) (Offered in the Fall.)

LSC 73 Introduction to Game Management / 3 sem. hrs.
☐ Prerequisite: Enrollment in natural resources or park/forest service technician programs 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. (Same as Recreation 73.) (Offered in the Fall.)

LSC 74 Introduction to Watershed Problems / 3 sem. hrs.
☐ Prerequisite: Enrollment in natural resources or park/forest service technician programs 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. (Offered in the Spring.)

LSC 99 Anatomy and Physiology Review / 1 to 3 sem. hrs.
A review of basic anatomy and physiology. This course is primarily for students who have taken a traditional course but who need a review and additional information about anatomy and physiology. (May be offered both semesters.)

LSC 121 Desert Natural History
This course is designed to show the exciting relationships among living things of the Arizona-Sonoran desert. Studies cover past events which influenced the development of the present desert environment and explore future possibilities should important balances in nature be disturbed.
(Six to ten week course.) (Offered both semesters.)
Non-credit.

LSC 122 Modern Concepts of Ecology
Basic ideas involving the operation of dynamic relationships between groups of organisms and their physical environment are discussed. This course illustrates the need to understand how our ecological systems function and the symptoms of our failure to maintain their integrity. (Six to ten week course.)
(Offered both semesters.)
Non-credit.

LSC 199 Cooperative Natural Resource Management Technician Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory natural resource management technician occupation for an average of 15 hours per week.
Course may be repeated.
First Year Level.

LSC 299 Cooperative Natural Resource Management Technician Training / 3 sem. hrs.
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 repeated.
Second Year Level.

LITERATURE

LIT 20-21 Survey of English Literature I, II / 3-3 sem. hrs.
☐ Prerequisite: COM 2 for transfer credit.
A survey of English literature with some major authors studied in depth. The first semester treats literature from the Anglo-Saxon period through the 18th century, and the second semester from the 19th century to the present.
(LIT 20 offered in the Fall, LIT 21 in the Spring.)

LIT 25-26 Survey of American Literature I, II / 3-3 sem. hrs.
☐ Prerequisite: COM 2 for transfer credit.
A survey of American literature with some major authors studied in depth. The first semester treats literature from Puritanism through the Civil War, and the second semester from the Civil War to the present.
(LIT 25 offered in the Fall, LIT 26 in the Spring.)

LIT 30 Afro-American Literature / 3 sem. hrs.
A survey of Afro-American literature, its cultural and historical roots, and its relationship to other ethnic literature in America. (Offered in the Spring.)

LIT 39-40 Introduction to Literature I, II / 3-3 sem. hrs.
☐ Prerequisite: COM 2 for transfer credit.
An exploration into the worlds of fiction, drama and poetry from the classics to science fiction. Much of the class time is spent on contemporary literature.
(LIT 39 offered both semesters, LIT 40 in the Spring.)

LIT 41-42 Introduction to World Literature I, II / 3-3 sem. hrs.
☐ Prerequisite: COM 2 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 with those since the Renaissance. (LIT 41 offered in the Fall, LIT 42 in the Spring.)

MATHEMATICS

(For student placement in mathematics: a student with no present skills in algebra should take MTH 70; a student proficient in handling signed numbers, solving simple equations, and performing algebraic operations with polynomials should take MTH 11; a student who has mastered two years of high school algebra and one year of high school geometry should take MTH 20 and/or MTH 24, or MTH 29. MTH 29 is recommended for pre-calculus students.)

MTH 11 Algebra II / 3 sem. hrs.
☐ Prerequisite: MTH 70 or equivalent.
Includes topics on polynomials, linear and quadratic equations, systems of equations, exponents, radicals, complex numbers, functions, graphing and logarithms.
(Offered both semesters.)
First Year Level.

MTH 12-13 Basic Concepts in Math / 3-3 sem. hrs.
☐ Prerequisite: MTH 70 or equivalent.
Required for all elementary education majors. MTH 12 treats the theory of fundamental operations with whole numbers through the concept of sets and a study of the properties of these numbers. MTH 13 extends the concepts to the set of real numbers. It also includes an introduction to algebra, geometry and statistics. (Offered both semesters.)
First Year Level.

MTH 20 College Algebra / 3 sem. hrs.
☐ Prerequisite: MTH 11.
Topics covered include exponents, radicals and logarithms; linear, quadratic and higher degree equations and functions with their graphs; determinants, matrices and systems of equations; complex numbers, progressions and the binomial expansion. (Offered both semesters.)
First Year Level.

MTH 24 Trigonometry / 3 sem. hrs.
☐ Prerequisite or Corequisite: MTH 20.
A study of angular measure, trigonometric functions, identities, graphs, equations, right and oblique triangles and inverse trigonometric functions. (Offered both semesters.)
First Year Level.

MTH 25 Finite Mathematics / 3 sem. hrs.
☐ Prerequisite: MTH 20.
Topics in set theory, logic, permutations, combinations, probability, Bernoulli trials and Markov chains.
(Offered both semesters.)
First or Second Year Level.

MTH 26 Topics in Calculus / 3 sem. hrs.
☐ Prerequisite: MTH 20.
Elementary topics in differential and integral calculus with applications to business and behavioral sciences.
(Offered both semesters.)
First or Second Year Level.

MTH 29 College Algebra and Trigonometry / 5 sem. hrs.
☐ Prerequisite: MTH 11 or 20.
Recommended for students planning to take calculus and analytic geometry. Covers all the topics in MTH 20 and 24. Students should consult with an instructor prior to registering for this course. (Offered both semesters.)
First Year Level.

MTH 30-31 Analytic Geometry and Calculus / 5-5 sem. hrs.
☐ Prerequisite: MTH 20 and 24, or MTH 29.
Covers plane and solid geometry in cartesian and polar coordinates with detailed study of first and second degree equations. Topics in calculus include limits, continuity, differentiation and integration of algebraic and transcendental functions, and applications. (Offered both semesters.)
First or Second Year Level.

MTH 35 Introductory Statistics / 3 sem. hrs.
☐ Prerequisite: MTH 20.
A study of statistical methods as applied to tabulating, analyzing and interpreting data. Includes averages, standard deviations, central limit theorem, confidence intervals, correlations, dispersions, frequency distributions, graphs, linear regression, normal curve, probability, standard deviation and tests of hypothesis. (Offered in the Spring.)
First Year Level.

MTH 36 Linear Algebra and Differential Equations / 4 sem. hrs.
☐ Prerequisite: MTH 31.
A study of ordinary differential equations and elements of linear algebra. (Offered both semesters.)
Second Year Level.

MTH 40 Fortran IV Programming / 1 to 3 sem. hrs.
(Same as Computer Science 40.)

MTH 60 Introductory Math / 3 sem. hrs.
For students having little or no mathematical background. Provides skills and practice for use in daily work or living situations such as work with fractions, decimals and percentages. (Offered both semesters.)
High School Level.

MTH 65 Health Careers Math / 3 sem. hrs.
☐ Prerequisite: Consent of Health Sciences faculty.
This course provides the necessary mathematical skills for chemistry. It includes the metric system, ratio and proportion, solving equations and logarithms. (Offered both semesters.)

MTH 70 Algebra I / 3 sem. hrs.
Covers basic concepts in elementary algebra and includes a study of signed numbers, operations with polynomials, factoring, linear equations and radical expressions. (Offered both semesters.)
High School Level.

MTH 71 Elementary Geometry / 3 sem. hrs.
Course includes a study of angles, lines, triangles, quadrilaterals, circles and geometric constructions. Deductive proofs are emphasized. It is recommended that elementary algebra be taken before this course. (Offered both semesters.)
High School Level.

MTH 74-75 Air Conditioning and Sheet Metal Math / 3-3 sem. hrs.
☐ Prerequisite: Consent of Air Conditioning and Sheet Metal faculty.
Covers the necessary algebra and geometry required of students in Air Conditioning and Sheet Metal. (MTH 74 offered in the Fall, MTH 75 in the Spring.)

MTH 80-81 Technical Mathematics I, II / 3-3 sem. hrs.
Practical mathematics for work in the industrial-technical field. (Offered both semesters.)
First Year Level.

MTH 82 Electronics Mathematics I / 3 sem. hrs.
Basic algebra including electronic calculator and slide rule instruction, simultaneous equations, Kirchoff's law, trigonometry and AC circuit analysis. (Offered both semesters.)

MTH 83 Electronics Mathematics II / 3 sem. hrs.
Computer number systems, Boolean Algebra, advanced AC circuit analysis, logarithms and decibels. (Offered both semesters.)

MTH 84-85 Automobile Technology Mathematics I, II / 3-3 sem. hrs.
Applied problems in arithmetic, fractions, decimals, percentage, ratio, use of formulas, graphs and basic algebra. (Offered both semesters.)

MTH 86 Electronics Mathematics III / 3 sem. hrs.
Advanced algebra, advanced trigonometry with applications to AM radios, and computer programming of electronic problems. (Offered both semesters.)

MEDIA TECHNICIAN

MET 50 Communigraphics I / 3 sem. hrs.
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. (Offered both semesters.)

MET 53 Cinematography I / 3 sem. hrs.
Covered are the techniques of basic 16mm motion picture production; camera operation; techniques of animation applications; film editing; and motion picture lab processes. The entire class is involved in the production and concept of one major film. (Offered both semesters.)

MET 70 Equipment Repair and Maintenance / 3 sem. hrs.
Electrical and mechanical repair and maintenance of instructional Media Technology equipment including tape recorders, projectors, mechanical graphics arts devices. (Offered both semesters.)

MET 80 Media Terminology / 1 sem. hr.
An introduction to the language of the media field. Application of the terminology in verbal and written communications to provide an understanding of these terms for working in the media field as technicians.

MET 81 Instructional Media Technology I / 3 sem. hrs.
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 sem. hrs.
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 sem. hrs.
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 sem. hrs.
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 sem. hrs.
☐ Prerequisite: MET 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 (2 hours lecture, 4 hours lab.)

MET 299 Cooperative Media Technician Training / 6 sem. hrs.
☐ 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. (Offered both semesters.)

MID-MANAGEMENT

MAN 50 Salesmanship / 3 sem. hrs.
A study of 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 the opportunities in selling. (Offered both semesters.)
First Year Level.

MAN 51 Retailing / 3 sem. hrs.
The organization and operation of a retail store; trends in the field; problems involved in the retailing of goods and services. (Offered both semesters.)
Second Year Level.

MAN 52 Small Business Management / 3 sem. hrs.
A study of the different types of business organization, and advantages and disadvantages of each; business operations including record keeping, employe and community relations. Special attention is given to minority group concerns. (Offered both semesters.)
First Year Level.

MAN 53 Advertising / 3 sem. hrs.
A basic understanding of the various aspects of advertising including planning, creating and use. (Offered both semesters.)

MAN 54 Supervision / 3 sem. hrs.
A study of the origin of personnel supervision; and an analysis of the components from the process of recruitment and training evaluation of employes to elements of decision making and the role of labor unions. (Offered both semesters.)

MAN 55 Business Organization and Management / 3 sem. hrs.
☐ Prerequisite: ACC 1, ECO 2.
A study of the role of business and management in a multicultural society; different types of organizations; the functions of the executive at all levels and the responsibility of the executive to owners, employes and the community. (Offered both semesters.)
Second Year Level.

MAN 56 Advertising Layout and Design / 3 sem. hrs.
☐ Prerequisite: MAN 53.
A workshop in present day creative advertising with practice in all current media. Actual practice, criticism and field trips. (Offered both semesters.)
Second Year Level.

MAN 57 Advanced Advertising / 3 sem. hrs.
☐ Prerequisite: MAN 53, 56.
Management of the advertising function in marketing. Initial analysis of managerial decisions regarding advertising as a problem solving variable in marketing operations. (Offered both semesters.)
Second Year Level.

MAN 58 Human Relations in Business and Industry / 3 sem. hrs.
Human factors in the field of business, getting along with colleagues and customers. Emphasis is on improving behavioral patterns with special attention paid to minority group attitudes and customs. (Offered both semesters.) (Same as Sociology and Recreation 58.)
First Year Level.

MAN 59 Marketing / 3 sem. hrs.
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. (Offered both semesters.)
Second Year Level.

MAN 62 Consumer Behavior / 3 sem. hrs.
A discussion and explanation of individuals deciding whether, what, when, where, how and from whom to purchase goods and services. (Offered both semesters.)

MAN 65 Real Estate Principles / 4 sem. hrs.
This course prepares the student for the state salesman's licensure qualifying examination. In addition, it provides familiarity with real estate and associated rules and regulations. (Offered both semesters.)

MAN 66 Real Estate Practices / 4 sem. hrs.
☐ Prerequisite: MAN 65 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. (Offered in the Spring.)

MAN 67 Real Estate Law / 3 sem. hrs.
☐ Prerequisite: MAN 66 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, licenses, deeds and conveyancing, and recording. (Offered in the Fall.)

MAN 68 Real Estate Appraisals / 3 sem. hrs.
☐ Prerequisite: MAN 67.
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. (Offered in the Spring.)

MAN 69 Real Estate Practicum / 3 sem. hrs.
☐ Prerequisite: MAN 68.
The major emphasis is on the practical application of real estate principles and practices through observation, field trips, off campus research, term papers and seminars. Practical observation is on real estate, title insurance, escrow, appraisal and research, and mortgage firms. (Offered in the Spring.)

MAN 199 Cooperative Mid-Management Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory mid-management occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

MAN 299 Cooperative Mid-Management Training / 3 sem. hrs.
A supervised cooperative work program for students in a mid-management occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

MILITARY SCIENCE

MSC 1 Introduction to ROTC / 2 sem. hrs.
Reviews the history, organization and mission of ROTC, the military and civilian obligation of the citizen. There also is an introduction to weapons and the leadership laboratory. (Offered in the Fall.)
First Year Level

MSC 2 Defense Establishment in National Security / 2 sem. hrs.
The history, mission and organization of the defense establishment. The role of the military in cold, limited and general warfare. Leadership laboratory included. (Offered in the Spring.)
First Year Level

MSC 3 American Military History / 2 sem. hrs.
Principles of war and a survey of American military history are studied from Colonial times to 1966. Leadership laboratory included. (Offered in the Fall.)
Second Year Level

MSC 4 Military Map Reading and Tactics / 2 sem. hrs.
An introduction to maps, map reading and the Lensatic compass. Also an introduction to small unit tactics. Leadership laboratory included. (Offered in the Spring.)
Second Year Level

MUSIC

MUS 1 History and Literature of Music I / 2 sem. hrs.
☐ Prerequisite: MUS 3.
A study of music literature with emphasis on structure, period and style. This course is required of all music majors. (Offered in the Fall.)

MUS 2 History and Literature of Music II / 2 sem. hrs.
A continuation of Music 1. (Offered in the Spring.)

MUS 3 Music Theory I / 4 sem. hrs.
A comprehensive introductory course in college level music theory integrating the study of rhythmic, melodic, harmonic, dynamic and formal aspects. Open to all students. (Offered both semesters.)

MUS 4 Music Theory II / 4 sem. hrs.
☐ Prerequisite: MUS 3.
The theory of music in the pre-tonal styles with emphasis on Medieval and Renaissance works. Study concentrates on melodic, rhythmic, harmonic, formal, cadential and textual aspects of compositions and examination of modal forms, innovative and extra-musical devices and evaluative techniques. Emphasis also is on the development of hearing, singing and keyboard skills. (Offered in the Spring.)

MUS 5 Music Theory III / 4 sem. hrs.
☐ Prerequisite: MUS 3.
The theory of music in tonal styles. Emphasis is on Baroque, Classical and Romantic works and on the development of hearing, singing and keyboard skills. Study concentrates on tertiary harmonic construction from seventh chords through borrowed, altered and eleventh/thirteenth chords as well as melodic, rhythmic and formal aspects of styles involved. (Offered in the Fall.)

MUS 6 Music Theory IV / 4 sem. hrs.
☐ Prerequisite: MUS 3.
The theory of music in post-tonal styles with emphasis on 20th Century composition and on the development of hearing, singing and keyboard skills. Study concentrates on melodic, harmonic and rhythmic developments which are transitional and innovative with respect to tonal music. Compositions representative of 20th Century techniques are analyzed. (Offered in the Spring.)

MUS 7 Basic Conducting Techniques I / 2 sem. hrs.
☐ Prerequisite: Two semesters of MUS 3, 6.
Choral conducting techniques and literature. Development of fundamental conducting skills with emphasis on choral techniques, organizational problems, materials and interpretation of instrumental literature. (Offered in the Fall.)

MUS 8 Basic Conducting Techniques II / 2 sem. hrs.
☐ Prerequisite: MUS 7.
Instrumental conducting techniques and literature. Development of fundamental conducting skills with emphasis on materials and interpretation of instrumental literature. (Offered in the Spring.)

MUS 20 Band / 1 sem. hr.
Participation in regular band rehearsals and performances with membership determined by auditions with the director. Continued development of musical band technical skills through interpretation is stressed for both credit and non-credit band members. (Offered both semesters.)
First or Second Year Level or Non-Credit

MUS 21 Jazz Band / 1 sem. hr.
Rehearsal and performances of many styles of music in the jazz idiom. Open to all students and offered both semesters. Membership is determined by audition with the director. (Offered both semesters.)

MUS 23 Instrumental Ensemble / 1 sem. hr.
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. (Offered both semesters.)

MUS 30 Chorale (SATB) / 1 sem. hr.
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. May be taken for credit or as non-credit elective. (Offered both semesters.)
First or Second Year Level or Non-Credit

MUS 31 College Singers (SATB) / 1 sem. hr.
A small choral ensemble chosen by audition. Repertory and performance includes best literature from all styles and periods. There will be various performances throughout the academic year. Open to all qualified students in the college. (Offered both semesters.)
First or Second Year Level or Non-Credit

MUS 32 Women's Chorus / 1 sem. hr.
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. (Offered both semesters if enough demand.)
First or Second Year Level or Non-Credit

MUS 34 Vocal Ensemble / 1 sem. hr.
Course offers an opportunity for supervised rehearsal and performance of literature for various vocal combinations. It is open to all students through a conference and audition by the instructor. (Offered both semesters.)

MUS 38 Voice Class I / 2 sem. hrs.
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. (Offered both semesters.)
First or Second Year Level

MUS 39 Voice Class II / 2 sem. hrs.
☐ Prerequisite: MUS 38.
A continuation of Music 38. (Offered in the Spring.)

MUS 40 Piano Class I / 1 sem. hr.
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. (Offered both semesters.)

MUS 41 Piano Class II / 1 sem. hr.
A continuation of MUS 40. Previous piano experience required. (Offered both semesters.)

MUS 42 Applied Music — Private Instruction / 1 sem. hr.
Course offers a private weekly lesson with an instructor, and participation in student recitals and jury exams. Maximum of 1 credit each semester. (Offered both semesters.)
Section 1 — Woodwinds
Section 2 — Brass
Section 3 — Percussion
Section 4 — Voice
Section 5 — Piano
Section 6 — Strings

MUS 50 Exploring Music / 2 sem. hrs.
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. (Offered both semesters.)

MUS 52 Introduction to Music Theory / 2 sem. hrs.
An introductory course in fundamental music theory. Designed to develop a basic literacy in music, the course consists of the completion of several initial units of MUS 3. Students should register for MUS 3. (Offered both semesters.)

MUS 54 Jazz Improvisation / 1 sem. hr.
☐ Prerequisite: MUS 3.
The study of jazz improvisation on various instruments. Emphasis is on the rhythmic, melodic and harmonic aspects of jazz styles. Membership determined by audition with instructor. (Offered both semesters.)

MUS 82 Applied Music — Private Instruction / 1 sem. hr.
Same as MUS 42, but without requirement for jury exam during each semester. Non-transferable.
Section 1 — Woodwinds
Section 2 — Brass
Section 3 — Percussion
Section 4 — Voice
Section 5 — Piano
Section 6 — Strings
Section 7 — Guitar

MUS 91 Guitar Class I / 1 sem. hr.
Beginning instruction and development of basic skills for both hands. Emphasis is on fingering and picking styles, chords, and melodic reading in first position. (Offered both semesters.)

MUS 92 Guitar Class II / 1 sem. hr.
Continuation of MUS 91 with more detailed study of chord structures, scales and melodic reading through the fourth position. (Offered both semesters.)

NURSING

NRS 50 Nursing Assistant / 5 sem. hrs.
☐ Prerequisite: Concurrent enrollment in LSC 50, HCA 54 and consent of instructor.
Students learn basic nursing skills enabling them to function as nursing assistants in a hospital. (Offered both semesters.)

NRS 55 Nursing Seminar / 2 sem. hrs.
☐ Prerequisite: NRS 50 and consent of instructor.
A continuation of NRS 50, developing additional knowledge and skills needed to function as part of the nursing team to a higher level than nursing assistant. The student, upon completion, will be eligible for NRS 72. (Offered both semesters.)

NRS 70 Nursing I / 6 sem. hrs.
☐ Prerequisite: Consent of instructor.
This course presents the roles and responsibilities of nurses; develops the basic knowledge and skills needed to give nursing care; and builds an understanding of health and man's total needs. A beginning course for the practical and degree nurse programs. (Offered both semesters.)

NRS 72 Nursing II / 7 sem. hrs.
☐ Prerequisite: NRS 70 or 55.
Highlighted are health needs and problems that occur frequently in pregnancy, infancy, childhood, adolescence and during older age. The role of the nurse includes giving physical and emotional care, teaching patients, and helping families identify and use their own and community resources. (Offered both semesters.)

NRS 75 Practical Nursing III / 10 sem. hrs.
☐ Prerequisite: NRS 72.
Alterations in psycho-social and physical functioning, connected with health problems, and the role of the practical nurse are discussed. This course completes the practical nursing program. (Offered during Summer session.)

NRS 80 A.D. Nursing III / 10 sem. hrs.
☐ Prerequisite: NRS 72.
Changes in overall functions which cause specific health problems are the basis of class discussions and clinical assignments. Emphasis is on increasingly complex care. (Offered both semesters.)

NRS 82 A.D. Nursing IV / 10 sem. hrs.

☐ Prerequsite: NRS 80.
A continued emphasis on complex patient care and the individual's reaction to illness, covering all age groups. Seminars on the current trends in nursing, and the legal and ethical responsibilities of the nurse prepare the student for her role after graduation. (Offered both semesters.)

NRS 121 R.N. Refresher Course

☐ Prerequisite: Arizona R.N. permit.
The inactive registered nurse is prepared to return to practice. Course content reviews the general principles of patient care, current trends in nursing, and responsibilities of the nurse on today's health team. Enrollment is limited. (Offered on demand.)
Non-Credit

OFFICE EDUCATION

OED 1 Shorthand I / 3 sem. hrs.

☐ Prerequisite: Typing or concurrent enrollment in OED 11.
A first course in shorthand, using the Gregg method. Designed to develop skills in taking simple dictation and transcribing notes with transcription practice introduced early in the course. (Offered both semesters.)

OED 2 Shorthand II / 3 sem. hrs.

☐ Prerequisite: One year of high school shorthand or 50 wpm, OED 54 or concurrent enrollment in OED 54.
A review of Gregg shorthand through dictation practice, with emphasis on speed and accuracy. (Offered both semesters.)

OED 3 Records Management / 2 sem. hrs.

The principles and procedures of filing and actual practice in the basic systems. Course deals with the management of established filing systems, transferring and disposing of records. (Offered both semesters.)

OED 11 Typing I / 3 sem. hrs.

A beginner's 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. Students with two or more semesters of high school typing may not take this course for credit without permission of the instructor. (Offered both semesters.)

OED 12 Typing II / 3 sem. hrs.

☐ Prerequisite: One year of typing or 30 wpm.
A further development of typing techniques, skills and knowledge. Accurate proofreading and a concept of mailability are stressed. Letters, manuscripts, tabulations, business reports, business forms and some legal documents are included. (Offered both semesters.)

OED 21 Calculating Machines / 2 sem. hrs.

☐ Prerequisite: BUS 51 or equivalent.
Instruction covers the operation of adding-listing machines, printing calculators and electronic calculators used for mathematical computation in the modern business world. (Offered both semesters.)

OED 22 Word Processing / 4 sem. hrs.

☐ Prerequisite: Knowledge of typing.
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 the spirit and stencil duplicators and offset press. (Offered both semesters.)

OED 50 Legal Secretarial Procedures I / 3 sem. hrs.

☐ Prerequisite: One year of typing or equivalent.
Provides knowledge and understanding of terminology and procedures of a law office involving wills, domestic relations and foreclosures. Typing proficiency is stressed. (Offered in the Fall.)

OED 51 Legal Secretarial Procedures II / 3 sem. hrs.

☐ Prerequisite: OED 50 or secretarial experience in a legal office, and one year of typing or equivalent.
A continued study of office and legal procedures in a law office including probate, personal injury, corporate and criminal matters. A further development of typing skills and techniques also are encouraged. (Offered in the Spring.)

OED 52 Typing III / 3 sem. hrs.

☐ Prerequisite: Two years of high school typing or 40 wpm.
High level skills in technique 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. (Offered both semesters.)

OED 53 Shorthand III / 3 sem. hrs.

☐ Prerequisite: Two years of shorthand or 70 wpm and OED 54, or concurrent enrollment with OED 54.
A further development of shorthand skills and transcription techniques. Emphasis is on mailable letters, English, spelling and punctuation. (Offered both semesters.)

OED 54 Business English / 3 sem. hrs.

A basic course in English fundamentals essential for modern business including grammar, punctuation, spelling and word use. (Offered both semesters.)

OED 55 Medical Terms / 3 sem. hrs.

This course provides an understanding of terminology essential to the medical business office. Emphasis is on understanding and ease in using medical terms. (Offered in the Fall.)

OED 56 Medical Transcription / 3 sem. hrs.

☐ Prerequisite: OED 55 or knowledge of medical terminology, and typing speed of 40 wpm.
This course develops speed and accuracy in typing, skill in the use of transcribing equipment and expansion of medical terminology. Practice in transcribing medical reports and correspondence is emphasized. (Offered in the Spring.)

OED 57 Office Procedures / 3 sem. hrs.

☐ Prerequisite: One year of typing; knowledge of shorthand desirable.
A study of the 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. (Offered both semesters.)

OED 58 Machine Shorthand I / 3 sem. hrs.

☐ Prerequisite: One year of typing or concurrent enrollment in OED 11.
Basic touch shorthand theory with emphasis on reading skills. Speed developed to 80 wpm. (Offered in the Fall.)

OED 59 Machine Shorthand II / 3 sem. hrs.

☐ Prerequisite: OED 58 and 11 or ability to type 40 wpm.
Intensive speed building with use of abbreviations and development of transcription skills. Speed developed to 120 words a minute. (Offered in the Spring.)

OED 64 Transcription / 3 sem. hrs.

☐ Prerequisite: OED 53 or equivalent or concurrent enrollment in OED 53, OED 54.
This fourth semester course in shorthand and transcription stresses high quality techniques and skills. Course content includes shorthand, typing, spelling, punctuation, word usage, proofreading, editing and other related topics.
(Offered in the Spring.)

OED 90 Seminar / 1 to 5 sem. hrs.

Current trends and new techniques in today's office. Emphasis is on improving office skills.

OED 199 Cooperative Office Education Training / 3 sem. hrs.

A supervised cooperative work program for students in an exploratory office education occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

OED 299 Cooperative Office Education Training / 3 sem. hrs.

A supervised cooperative work program for students in an office education occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

OPERATING ROOM TECHNOLOGY

ORT 52 Basic Surgical Technology / 4 sem. hrs.

☐ Prerequisite: Consent of instructor.
Explores basic concepts of patient care in surgery and the principles of asepsis and operating room techniques. On-campus laboratory practice is provided in the preparation and care of surgical supplies and equipment, patient positioning and draping, gowning and gloving, instrumentation and sutures. (Offered both semesters.)

ORT 53 Surgical Biology / 3 sem. hrs.

☐ Prerequisite: Consent of instructor.
Bacteriology, wound healing, hematology, fluid and electrolyte balance, anesthesiology, pharmacology, pathology, diagnostic procedures and lab tests, as related to a surgical patient. Laboratory tours of various hospital departments are included. (Offered both semesters.)

ORT 54 Surgical Procedures / 3 sem. hrs.

☐ Prerequisite: Consent of instructor.
Series of guest lectures by Tucson surgeons regarding specific surgical procedures, designed to help students better understand various operations. Subject material is correlated with studies in anatomy and operating room technical skills. (Offered both semesters.)

ORT 55 Surgical Anatomy / 4 sem. hrs.

☐ Prerequisite: Consent of instructor.
A detailed regional review of human anatomy as encountered during surgery. Includes laboratory study. (Offered both semesters.)

ORT 91 Clinical Lab / 12 sem. hrs.

☐ Prerequisite: ORT 52, 53, 54, 55 and consent of instructor.
A minimum of 600 hours of supervised clinical experience is spent in operating rooms of local affiliated hospitals, utilizing acquired skills in actual surgical situations. (Offered in the Spring and Summer.)

OPHTHALMIC DISPENSING

ODT 51 Optical Orientation I / 6 sem. hrs.

☐ Prerequisite: Admission to ophthalmic dispensing program.
This course covers the role of the ophthalmic laboratory, laboratory technician, dispensing optician, optometrist, ophthalmologist, etc.; and basic information on lenses, refractive errors, frame construction, repair and laboratory organization. (Offered in the Fall.)
First Year Level

ODT 52 Optical Orientation II / 3 sem. hrs.

☐ Prerequisite: ODT 51.
Introduction to frame measurements, reading prescriptions and frame adjusting, types of single vision and multi-focal lenses, frames and manufacturers. (Offered in the Spring.)

ODT 53 Optical Laboratory I / 3 sem. hrs.

☐ Prerequisite: ODT 51.
Lens surfacing, layouts, base curves, thickness, lens blanks, hardening, lens edging and insertion. (Offered in the Spring.)
First Year Level

ODT 54 Optical Dispensing I / 6 sem. hrs.

☐ Prerequisite: ODT 52.
Facial measurements, adjusting, frame selection, vocational glasses, lens and frame design. (Offered in the Fall.)
Second Year Level

ODT 55 Contact Lens Anatomy and Physiology / 4 sem. hrs.

☐ Prerequisite: ODT 52.
Basic information on the anatomy and physiology of the eye for contact lens fitting. Introduction to fitting procedures.
(Offered in the Fall.)
Second Year Level.

ODT 56 Optical Assistant / 3 sem. hrs.

☐ Prerequisite: ODT 52.
Optical instrumentation, field charting, visual skills, tangent screen, taking case histories, office procedures, etc.
(Offered in the Fall.)
Second Year Level

ODT 57 Contact Lenses / 5 sem. hrs.

☐ 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. (Offered in the Spring.)
Second Year Level

ODT 58 Optical Dispensing II / 6 sem. hrs.

□ Prerequisite: ODT 54.
Cataract lenses, adjusting, styles, record keeping, problem prescriptions and optical dispensary organization. (Offered in the Spring.)
Second Year Level

ODT 59 Senior Seminar / 2 sem. hrs.

□ Prerequisite: ODT 54, 55.
Ethics of the profession, complete review of all material for state board examination, state laws and program evaluation. (Offered in the Spring.)
Second Year Level

PAPAGO

PGO 50 Elementary Papago / 4 sem. hrs.

This is a conversation course with emphasis on listening and repetition. Designed for the non-Papago speaking students. (Offered in the Fall.)
First Year Level

PGO 51 Papago for Native Speakers / 4 sem. hrs.

□ Prerequisite: Knowledge of Papago.
Class needs will be determined, due to different speaking dialects. (Offered in the Spring.)
Second Year Level

PHILOSOPHY

PHI 1-2 Introduction to Philosophy I, II / 3-3 sem. hrs.

Course seeks to provide the student with a sound 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.
(PHI 1 offered both semesters, PHI 2 in the Spring.)

PHI 20 An Introduction to Logic / 3 sem. hrs.

□ Prerequisite: PHI 1.
The objective of this course is to increase the student's awareness of the requirements and processes of valid thinking, decision-making and communication.
(Offered in the Spring.)
First or Second Year Level

PHI 30 Introductory Studies in Ethics and Social Philosophy / 3 sem. hrs.

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. (Offered in the Fall.)

PHI 40 Philosophy of Religion / 3 sem. hrs.

An introduction to the philosophical study of religion.
(Same as Religion, Comparative 40.) (Offered in the Spring.)

PHI 45 Special Topics in Philosophy / 3 sem. hrs.

Philosophical topics of special interest to students and faculty are treated in depth. (Offered both semesters.)

PHYSICAL EDUCATION

PED 1-4 Practicum I-IV / 1 sem. hr. per sem.

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.
(Offered both semesters.)

PED 5-6 Field Work I, II / 1-1 sem. hr.

Provides a cooperative educational experience involving the student in working with federal, state, county, municipal and private agencies under supervision. (Offered both semesters.)

PED 9-12 Service Activity Classes / 1 sem. hr. per sem.

Open to all students. (*Suggested for Law Enforcement majors.)

Archery
Badminton
Bailes Folkloricos
Baseball
Bowling
Dance
Defensive Tactics* (2 sem. hrs.)
Fencing
Field Hockey
Football, Flag
Folklore Dances
Golf
Gymnastics & Tumbling
Handball
Ice Hockey
Ice Skating
Independent Activity
Judo
Physical Fitness*
Scuba
Self-Defense
Soccer
Softball
Square Dancing
Swimming
  Life Saving
  Water Safety Instructor
Tennis
Volleyball
Weight Training*
Wrestling

PED 20 Facilities for Physical Education and Recreation / 2 sem. hrs.

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.
(Same as Recreation 20.) (Offered in the Spring.)

PED 25 Foundations of Athletic Training / 2 sem. hrs.

This course consists of practical work in the training room as well as instruction in the techniques of athletic training. Students experience hydrothermy, electrothermy, taping, and various preventive and corrective methods used in sports medicine.
(Offered both semesters.)

PED 30 Elementary School Physical Education / 3 sem. hrs.

This is a skills/methods course designed to provide 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 school. (Offered in the Fall.)

PED 39 Introduction to Leisure Education / 3 sem. hrs.

For prospective professionals in the fields of health and physical education — a survey of opportunities and qualifications as well as a general orientation to these fields through movement education. (Offered in the Fall.)

PED 40-43 Professional Activities / 1 to 3 sem. hrs. per sem.
A two-year required professional preparation course for majors and minors: PED 40 — swimming, soccer-speedball, flag football (M), handball-self defense (W); PED 41 — tennis, track and field, basketball; PED 42 — golf, volleyball, wrestling (M), archery (W); PED 43 — Badminton, gymnastics and tumbling,-softball (W) and handball (M).

PED 44 Dance / 2 sem. hrs.
Introduction to folk, square, modern and social dances for majors and minors. (Same as Recreation 44.) (Offered in the Fall.)

PED 45 Sports Officiating / 2 sem. hrs.
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 Recreation 45.) (Offered both Semesters.)

PED 47 Intramural Sports and Equipment / 2 sem. hrs.
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 49 History of Physical Education / 2 sem. hrs.
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. (Offered in the Spring.)

PED 199 Cooperative Physical Education Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory physical occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

PED 299 Cooperative Physical Education Training / 3 sem. hrs.
A supervised cooperative work program for students in a physical education occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

PHYSICS

PHY 2-3 Introductory Physics / 4-4 sem. hrs.
☐ Prerequisite: High School algebra.
An introduction to physics through a study of the principles of mechanics, heat, sound, light, electricity and magnetism. Calculus is not required. (Offered both semesters.)
First Year Level

PHY 4-5 Introductory Physics with Calculus / 4-4 sem. hrs.
☐ Prerequisite: Concurrent with MTH 30.
An introduction to physics for mathematics and science majors covering the basic principles of mechanics, heat, sound, light, electricity and magnetism, atomic and nuclear physics. Calculus may be taken concurrently. Laboratory is required. (Offered both semesters.)

PHY 9 The Physics of Musical Instruments / 4 sem. hrs.
Explores the physical principles involved in the construction and sound production of musical instruments. For liberal arts majors. Laboratory required. (Offered both semesters.)

PHY 10 Introductory Mechanics / 4 sem. hrs.
☐ Prerequisite: MTH 30.
An introduction to mechanics. Recommended for physics majors and those wishing a strong mechanics background. Laboratory required. (Offered both semesters.)
First Year Level

PHY 12 General Physics for Education Majors / 3 sem. hrs.
☐ Prerequisite: High School algebra.
A one-semester course offering an introduction to the subject matter of general physics, mechanics, heat, light, sound, electricity, magnetism and modern physics. Includes laboratory. (Offered both semesters.)

PHY 16 Introductory Electricity and Magnetism / 4 sem. hrs.
☐ Prerequisite: PHY 10 or 4-5, MTH 30, 31.
Basic principles of electricity and magnetism. This course is planned for prospective physics majors and those wishing a strong background in electricity and magnetism. Laboratory required. (Offered both semesters.)
First Year Level

PHY 21 Introduction to Waves and Heat / 3 sem. hrs.
☐ Prerequisite: PHY 10 or 4-5, MTH 30, 31.
Studies in heat, sound and light including optics and optical instruments. Recommended for physics majors. Laboratory required. (Offered both semesters.)
First Year Level

PHY 30 Introduction to Modern Physics / 3 sem. hrs.
☐ Prerequisite: PHY 10 or 4-5, MTH 30, 31.
An introduction to atomic and nuclear physics, relativity, radioactivity, quantum physics. Laboratory required. (Offered both semesters.)
Second Year Level

PHY 50 Technical Physics I / 3 sem. hrs.
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. Laboratory required. (Offered both semesters.)

PHY 51 Physics for Electronics / 2 sem. hrs.
An introduction to the basic principles of matter and energy important to the understanding of electronics. Laboratory required. (Offered both semesters.)

PHY 52 Technical Physics II / 3 sem. hrs.
☐ Prerequisite: PHY 50, MTH 70.
A continuation of PHY 50. The course deals mostly with the application of the electro-magnetic theory to the technologies. (Offered upon demand.)

PHY 55 Fundamental Physics / 1 to 4 sem. hrs.
☐ Prerequisite: High School algebra.
This course offers a brief introduction to the phenomena occurring in the physical world. Units (topics) are chosen according to special interests of students. Laboratory required. (Offered both semesters.)

PHY 60 Science and Society / 3 sem. hrs.
What is and what should be the role of science and technology in our contemporary world. This forms the basis of the course. Laboratory required. (Offered both semesters.)

PHY 62 How Things Work / 1 to 3 sem. hrs.
How does your iron work? Or a thermometer? Or a telephone? The course reviews over 75 common (or perhaps mysterious) objects that surround us. Laboratory required. (Offered both semesters.)

PHY 70 Topics in Physical Science / 1 to 3 sem. hrs.
The course involves independent projects. (Offered both semesters.)

POLITICAL SCIENCE

POL 1 Introduction to Political Science / 3 sem. hrs.
Politics. What is it? What is its significance in daily life? How do political systems change? (Offered both semesters.)
First Year Level

POL 3 Ethics for Public Service / 3 sem. hrs.
(Same as Law Enforcement 3.)

POL 10 American National Government and Politics / 3 sem. hrs.
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. (Offered both semesters.)
First Year Level

POL 11 American State and Local Governments and Politics / 3 sem. hrs.
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. (Offered both semesters.)
First or Second Year Level

POL 20 Introduction to Comparative Politics / 3 sem. hrs.
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. (Offered in the Spring.)
Second Year Level

POL 30 Introduction to International Relations / 3 sem. hrs.
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. (Offered in the Fall.)
Second Year Level

POL 40 Minority Groups and the Political Process / 3 sem. hrs.
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. (Offered in the Fall.)
Second Year Level

POL 49 Independent Study / 2 to 4 sem. hrs.
Independent readings or special projects to be arranged with the instructor. (Offered both semesters.)
Second Year Level

POL 50 Immigration Law and Practices / 3 sem. hrs.
The legal and political status of immigrants from Mexico, the process of immigration and counseling for the immigrant. (Offered in the Spring.)
First Year Level

POL 50 Derecho, Conceptos y Procesos de Imigración / 3 sem. hrs.
Se estudiará el derecho de imigración a los Estados Unidos, sus procesos y ramificaciones legales. (Se ofrece en la primavera.)

POL 100 Political Revolution and Violence / 3 sem. hrs.
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. (Offered in the Spring.)

PSYCHOLOGY

PSY 20-21 Introduction to Psychology I, II / 3-3 sem. hrs.
I — Basic principles of learning; physical and physiological factors as related to individual growth. II — Introduction to affect, personality organization and perception. (Continuous enrollment both semesters.)

PSY 22 Introduction to Social Psychology / 3 sem. hrs.
The basic theories and concepts of social psychology and the individual's experience in group situations. (Offered both semesters.)

PSY 23 Normal Personality / 3 sem. hrs.
Psychological functioning and coping behaviors for normal personality development. Early adulthood is stressed. (Continuous enrollment both semesters.)

PSY 25 Social Psychology Practicum / 3 to 5 sem. hrs.
☐ Prerequisite: Consent of instructor.
Students become familiar with some specific area of social psychology through a review of pertinent research, directed observation, and personal participation in relevant experimental or natural settings. (Offered in the Spring.)
First or Second Year Level

PSY 49 Individual Studies in Psychology / 3 to 6 sem. hrs.
☐ Prerequisite: Consent of instructor.
An exploration of special interest areas. Content to be determined by student and facilitator-instructor. (Offered both semesters.)
First or Second Year Level

PSY 51 Special Topics in Human Relations in Business and Industry / 3 sem. hrs.
Special aspects of business and industrial psychology are developed from the needs of registrants. (Offered in the Spring.)
First or Second Year Level

RADIOLOGIC (X-RAY) TECHNOLOGY

RAD 55 Skull Refresher / 2 sem. hrs.
☐ Prerequisite: Registration with the American Registry of Radiologic Technologists.
This course is for the Registered Radiologic Technologist 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. (Offered in the Spring.)

RAD 71 Introduction to Radiography / 3 sem. hrs.
An introduction to x-ray technology and its applications in allied health professions. Included are definitions of professional and legal responsibilities in the field, a history of the technique and its terminology, and demonstration and use of x-ray and film processing equipment. (Offered in the Fall.)
First Year Level

RAD 72 Radiographic-Photographic Chemistry and Techniques / 4 sem. hrs.
☐ Prerequisite: RAD 71.
Designed to help students understand the causes of x-ray image formation. An in depth study and application of radiographic techniques, the effects of film processing chemicals, cine film, photographic principles, infra-red photography, radiation chemistry, and biological effects of radiation exposure. (Offered in the Spring.)
First Year Level

RAD 73 Radiographic Positioning I / 4 sem. hrs.
☐ Prerequisite: RAD 71.
Demonstration and practice of routine and special radiographic positioning for visualization of the bones of the skeleton, exclusive of those of the skull. Radiographic phantoms are used to relate only the principles of exposures. Group process is used to evaluate all films. (Offered in the Spring.)
First Year Level

RAD 81 Radiographic Positioning II / 4 sem. hrs.
☐ Prerequisite: RAD 73.
Demonstration and practice of routine and special radiographic positioning for visualizaton of the bones of the skull and routine visceral studies. Radiographic phantoms are used to relate only principles of exposure. Group process is used to evaluate all films. (Offered in the Fall.)
Second Year Level

RAD 82 Radiographic Physics / 4 sem. hrs.
☐ Prerequisite: RAD 72.
Designed to help students understand the function of all x-ray machine components and special accessory units. Demonstration and application of x-ray equipment. Emphasis is on radiographic principles and on methods of protection against ionizing radiations. (Offered in the Fall.)
Second Year Level

RAD 83 Clinical Procedures I / 3 sem. hrs.
☐ Prerequisite: Completion of second semester courses.
Students apply their acquired skills of routine and emergency positioning in clinical situations under the direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals. (Offered in the Fall.)
Second Year Level

RAD 84 Radiographic Positioning III / 4 sem. hrs.
☐ Prerequisite: RAD 81.
Demonstration and practice of special radiographic procedures and such specialties as contrast media studies, pediatrics, nursing and surgical procedures. (Offered in the Spring.)
Second Year Level

RAD 85 Radiation Therapy and Nuclear Medicine / 4 sem. hrs.
☐ Prerequisite: RAD 82.
Use of radiation in treatment. The theory of radioactivity, nuclear isotope production and their medical applications are introduced. Use of measuring and monitoring instruments is demonstrated and practiced under the supervision of a radiologist or registered radiation therapist in an affiliated radiotherapy clinic. (Offered in the Spring.)
Second Year Level

RAD 86 Clinical Procedures II / 3 sem. hrs.
☐ Prerequisite: RAD 83.
A continuation of RAD 83. Students apply advanced skills in emergency and specialized radiological procedures in clinical situations under the direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals. (Offered in the Spring.)
Second Year Level

RAD 87 Radiation Biology / 3 sem. hrs.
☐ Prerequisite: RAD 85.
Examination of the effects of radiation upon living tissue. Emphasis is given to x-ray and gamma ray effects from diagnostic and therapeutic exposures. (Offered in the Fall.)
Second Year Level

RAD 91 Hospital Practicum I / 12 sem. hrs.
☐ Prerequisite: RAD 71, 72, 73, 81, 82, 83, 84, 85, 86, 87.
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. (Offered in the Summer.)

RAD 92 Hospital Practicum II / 12 sem. hrs.
☐ Prerequisite: RAD 91.
This course is a continuation of RAD 91. (Offered in the Fall.)

RAD 93 Hospital Practicum III / 12 sem. hrs.
☐ Prerequisite: RAD 92.
A continuation of RAD 92. (Offered in the Spring.)

READING

REA 52 Bilingual Reading / 3 sem. hrs.

☐ Prerequisite: Some reading ability in English and Spanish. Laboratory methods and techniques are used to improve reading in English and Spanish. Three Pima credits are given in Reading plus one elective transfer credit in Spanish. There are side by side readings in English and Spanish, independent readings in each and vocabulary development in both. The corequisite is SPA 38. (Offered both semesters.)

REA 60 series / 4 sem. hrs.

All students should register for REA 60 which is composed of three levels. Level placement for each student is determined by diagnostic testing and teacher evaluation after enrollment. Individual instruction emphasizes vocabulary, comprehension and reading rate in each of the three levels which are: REA 60 — Basic Reading Improvement; REA 61 — Developmental Reading; REA 62 — Critical Reading. Classes meet four times a week but special schedules can be arranged for students who otherwise would have a conflict. (Non-native speakers of English should enroll in English as a Second Language.) (Offered both semesters.)

RECREATION

REC 1 Introduction to Parks and Recreation / 3 sem. hrs.

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. (Offered both semesters.)

REC 2 Group Leadership / 2 sem. hrs.

Course provides a knowledge of human dynamics, leadership ability and principles of effective leadership. Students experience these characteristics by observation, demonstration, participation and field trips. (Offered in the Spring.)

REC 3 Recreation Administration and Finance / 3 sem. hrs.

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. (Offered in the Spring.)

REC 9-12 Recreational Activities / 1 sem. hr. per sem.

Open to all students. (Offered both semesters.)
Camping and Hiking
Defensive Tactics (2 sem. hrs.)
Firearms
Life Saving
Marksmanship
Mountaineering
Physical Fitness
Self-Defense for Women

REC 14 Program Planning and Organization / 3 sem. hrs.

The essential elements and basic principles of organization, supervision, promotion and evaluation of various types of recreation programs and services. (Offered in the Spring.)

REC 15 Outdoor Recreation-Education / 3 sem. hrs.

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. (Offered both semesters.)

REC 16 Recreation for Special Groups / 3 sem. hrs.

Students are introduced to various recreation programs for special groups. Special consideration is given to organizing and planning recreational activities for the handicapped, aged and corrective programs. (Offered in the Spring.)

REC 17 Child Growth and Development / 3 sem. hrs.

(Same as Home Economics 17.)

REC 18 Survival / 2 sem. hrs.

The principles and techniques of survival. Students have an opportunity to enhance their ability to survive with the environment. (Offered both semesters.)

REC 19 Recreational Games / 2 sem. hrs.

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. (Offered in the Fall.)

REC 20 Facilities for Physical Education and Recreation / 2 sem. hrs.

(Same as Physical Education 20.)

REC 21 Drug Education and First Aid / 2 sem. hrs.

This course provides the recreation leader with the knowledge of drug abuse and first aid techniques leading to the standard Red Cross certificate. (Offered in the Fall.)

REC 44 Dance / 2 sem. hrs.

(Same as Physical Education 44.)

REC 45 Sports Officiating / 2 sem. hrs.

(Same as Physical Education 45.)

REC 51 Arts and Crafts / 3 sem. hrs.

Focuses on the practical experience in creative craft projects. Included are ceramics, metal, weaving, woodworking and junk art. (Offered in the Spring.)

REC 52 Recreation Systems and Management / 3 sem. hrs.

An introduction to national, state, county, city and private parks and the recreational systems offered in each. (Offered in the Fall.)

REC 58 Human Relations in Business and Industry / 3 sem. hrs.

(Same as Mid-Management and Sociology 58.)

REC 59 Park Administration / 3 sem. hrs.

The administrative procedures and techniques of various park systems. (Offered in the Spring.)

REC 70 Conservation of National Resources / 3 sem. hrs.

(Same as Life Sciences 70.)

REC 71 Survey of Western Flora / 3 sem. hrs.

(Same as Life Sciences 71.)

REC 72 Survey of Western Land Vertebrates / 3 sem. hrs.

(Same as Life Sciences 72.)

REC 73 Introduction to Game Management / 3 sem. hrs.
(Same as Life Sciences 73.)

REC 74 Public Relations and Communigraphics / 3 sem. hrs.
Course covers the development of flyers, brochures and pamphlets; problems of dealing with the public; and providing information on the agency's functions and activities.
(Offered in the Fall.)

REC 75 Water Recreation and Resources / 3 sem. hrs.
Practices in managing outdoor water oriented recreation on private and public lands. (Offered in the Fall.)

REC 199 Cooperative Recreation Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory recreation occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

REC 299 Cooperative Recreation Training / 3 sem. hrs.
A supervised cooperative work program for students in a recreation occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

RELIGION, COMPARATIVE

REL 20 Old Testament / 3 sem. hrs.
The major works of the Old Testament are studied with emphasis given to their religious, moral, historical and literary significance.
(Offered in the Fall.)

REL 21 New Testament / 3 sem. hrs.
The major works of the New Testament are studied with emphasis given to their religious, moral, historical and literary significance. (Offered in the Spring.)

REL 25 Islam / 3 sem. hrs.
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. (Offered in the Spring.)

REL 30 Comparative Religions: Oriental / 3 sem. hrs.
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. (Offered both semesters.)

REL 40 Philosophy of Religion / 3 sem. hrs.
(Same as Philosophy 40.)

RESPIRATORY THERAPY

RTH 71 Equipment and Procedures I / 3 sem. hrs.
☐ Prerequisite: Admission to Respiratory Therapy program.
A brief history of respiratory therapy, handling of medical gases, safety practices, and general equipment used in the administration of gases are covered in this introductory course.
(Offered in the Fall.)
First Year Level

RTH 73 Clinical Medicine / 2 sem. hrs.
☐ Prerequisite: RTH 71.
This course covers the specific principles of the pharmacological classifications of medications, the study of micro-organisms and control of pathogens related to cardiopulmonary disorders.
(Offered in the Spring.)

RTH 80 Equipment and Procedures II / 3 sem. hrs.
☐ Prerequisite: RTH 71.
The student is introduced to the study of humidity-aerosol relationships and methods of medical gas administration.
The theory of construction of specific equipment used is studied.
(Offered in the Spring.)
First Year Level

RTH 81 Equipment and Procedures III / 2 sem. hrs.
☐ Prerequisite: RTH 80.
Methods and principles of resuscitation are discussed in depth, also the theory and application of resuscitation equipment.
(Offered in the Summer.)
First Year Level

RTH 82 Respiratory Physiology / 5 sem. hrs.
☐ Prerequisite: LSC 20, RTH 80.
A study of lung development, pathology and hypoxic states; the principles involved in ventilation and gas transport within the human body. (Offered in the Summer.)
First Year Level

RTH 86 Diseases and Treatments I / 5 sem. hrs.
☐ Prerequisite: RTH 82.
Cardiopulmonary diagnostic procedures and disorders are discussed. (Offered in the Fall.)
Second Year Level

RTH 87 Equipment and Procedures IV / 5 sem. hrs.
☐ Prerequisite: RTH 81.
The structural theory of respirators, chest physiotherapy and respiratory therapy procedures are covered. (Offered in the Fall.)
Second Year Level

RTH 89 Diseases and Treatment II / 5 sem. hrs.
☐ Prerequisite: RTH 86.
A continuation of the study of pathophysiology and treatment of cardiopulmonary disease. (Offered in the Spring.)
Second Year Level

RTH 90 Equipment and Procedures V / 5 sem. hrs.
☐ Prerequisite: RTH 87.
The construction and use of pulmonary function testing equipment and volume limited ventilators. (Offered in the Spring.)
Second Year Level

RTH 91 Clinical Procedures I / 5 sem. hrs.
This course introduces the student to the application of beginning respiratory therapy procedures in a hospital environment. (Offered in the Summer.)

RTH 92 Clinical Procedures II / 5 sem. hrs.
Continuation of RTH 91 with further application of respiratory procedures. (Offered in the Fall.)

RTH 93 Clinical Procedures III / 5 sem. hrs.
A continuation of RTH 92 with application of the most advanced techniques in respiratory therapy. (Offered in the Spring.)

RTH 99 Clinical Problems / By Arrangement
☐ Prerequisite: Completion of first year courses.
This is a special procedures course designed for students to apply their acquired skills of routine and emergency procedures in a clinical situation under the direct supervision of the registered staff therapists.

SHEET METAL

SML 70 Sheet Metal I / 4 sem. hrs.
☐ Prerequisite: Concurrent with SML 80.
Students learn to layout and fabricate metal items for air conditioning fittings under proper instruction given on the use of hand and machine tools. (Offered in the Fall.)

SML 71 Sheet Metal II / 4 sem. hrs.
☐ Prerequisite: SML 70.
A continuation of layout and fabricating fittings for air conditioning. Students learn to build and create these objects. (Offered in the Spring.)

SML 72 Architectural Sheet Metal / 3 sem. hrs.
☐ Prerequisite: SML 70, 71.
Students are supervised in fabricating gutterwork, valleys, range hoods, flashing and ornamental work. They also are exposed to different designing problems in sheet metal. (Offered in the Spring.)
Second Year Level

SML 80-81-82 Sheet Metal Pattern Layout I-III / 3-3-3 sem. hrs.
☐ Prerequisite: Consent of instructor.
Students are taught 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. (Offered both semesters.)

SML 199 Cooperative Sheet Metal Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory sheet metal occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

SML 299 Cooperative Sheet Metal Training / 3 sem. hrs.
A supervised cooperative work program for students in a sheet metal occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

SOCIAL SERVICES

SSE 16 Community Organization and Development / 3 sem. hrs.
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. (Offered both semesters.)
Second Year Level

SSE 33 Introduction to Social Welfare / 3 sem. hrs.
An introduction to our social welfare system: what it is, has been, and what it may become nationally and in the local community. Also included is an in depth review of community agencies and resources. (Offered both semesters.)
First Year Level

SSE 34 Casework Methods / 3 sem. hrs.
☐ Prerequisite: SSE 33.
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. (Offered both semesters.)
First Year Level

SSE 35 Group Work / 3 sem. hrs.
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. (Offered both semesters.)
Second Year Level

SSE 199 Cooperative Social Services Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory social services occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

SSE 299 Cooperative Social Services Training / 3 sem. hrs.
A supervised cooperative work program for students in a social services occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

SOCIOLOGY

SOC 15 Human Ecology / 4 sem. hrs.
(Same as Earth and Life Sciences 15, but may not be accepted for transfer under Sociology.)

SOC 24 Ghetto Society / 3 sem. hrs.
☐ Prerequisite: SOC 30 for U.A. transfer.
A study of minority socialization and the life of urban disadvantaged groups. (Offered in the Fall.)
First or Second Year Level

SOC 26 Explorations in Prejudice / 3 sem. hrs.
☐ Prerequisite: SOC 30 for U.A. transfer.
Why we hate each other. What we, as participants in this course, do about our own prejudice and prejudice in the community. (Offered in the Spring.)
First or Second Year Level

SOC 30 Introduction to Sociology / 3 sem. hrs.
What this society is, how we live in it and what we can do with it. (Continuous enrollment both semesters.)
First or Second Year Level

SOC 31 Current United States Social Problems / 3 sem. hrs.
☐ Prerequisite: SOC 30 for U.A. transfer.
How individuals get constructively involved. (Continuous enrollment both semesters.)
First or Second Year Level

SOC 32 Introduction to Civil Rights Practices / 3 sem. hrs.
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 Political Science 49.) (Offered both semesters.)
First or Second Year Level

SOC 46 Special Topics in Social Sciences or Meeting with Change / 3 to 6 sem. hrs.
☐ Prerequisite: Consent of instructor.
Topics include alienation, altered states of consciousness, death, parapsychology, Utopian society, man and his symbols, human sexual behavior and ceremonial behaviors. Topics offered depend on the background and current interests of faculty and students. (Offered in the Spring.)
First or Second Year Level

SOC 48 Sociology of Utopia / 3 sem. hrs.
Course includes 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 communical experimentation. (Offered.in the Spring.)

SOC 49 Individual Studies in Sociology / 3 to 6 sem. hrs.
☐ Prerequisite: Consent of instructor.
An exploration of special interest areas. Content to be determined by student and facilitator-instructor. (Offered both semesters.)
First or Second Year Level

SOC 55 Topics in Community Involvement / 1 to 3 sem. hrs.
☐ 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 advisers. Special activities also will be determined by the advisers. Students employed or working as volunteers with agencies or groups may get credit for those activities under this course. (Offered in the Fall.)
First or Second Year Level

SOC 58 Human Relations in Business and Industry / 3 sem. hrs.
(Same as Mid-Management and Recreation 58.)

SOC 59 Introduction to Cities and Community Planning / 3 sem. hrs.
An introductory course designed to help students understand the urban environment and how it functions, and the role that community planning can and should play in adding to the quality of urban living. (Offered in the Fall.)

SPANISH

SPA 1 Elementary Spanish I / 4 sem. hrs.
Basic communication skills are taught, with emphasis on oral communication and elementary grammar. Students also are exposed to the culture and traditions of the Spanish speaking countries. Class meets four hours; lab, one hour. (Offered both semesters.)
First Year Level

SPA 2 Elementary Spanish II / 4 sem. hrs.
☐ Prerequisite: SPA 1 or equivalent.
A continuation of Spanish I. Class meets four hours; lab is one hour. (Offered both semesters.)
First Year Level

SPA 3 Intermediate Spanish I / 4 sem. hrs.
☐ Prerequisite: SPA 2 or equivalent.
An intensive review of grammar fundamentals and a continued practice in speaking. Students also read selected authors and write short compositions. Class, four hours; lab, one hour. (Offered both semesters.)
Second Year Level

SPA 4 Intermediate Spanish II / 4 sem. hrs.
☐ Prerequisite: SPA 3 or equivalent.
This is a continuation of Intermediate Spanish I. Class, four hours; lab, one hour. (Offered both semesters.)
Second Year Level

SPA 5-6 Imaginative Writing / 3 sem. hrs.
The course is designed to develop creative writing abilities. (SPA 5 offered in the Fall, SPA 6 in the Spring.)

SPA 5-6 Literatura Creativa / 3 sem. hrs.
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 5 se ofrece en el otoño, SPA 6 en la primavera.)

SPA 25 Intermediate Spanish Composition and Conversation I / 3 sem. hrs.

☐ Prerequisite: SPA 4 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. Class, three hours; lab, one hour. (Offered in the Fall.)
Second Year Level

SPA 25 Composición y Conversación en Español / 3 sem. hrs.

El curso está disenado 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. (Se ofrece en la primavera.)

SPA 26 Intermediate Spanish Composition and Conversation II / 3 sem. hrs.

☐ Prerequisite: SPA 25 or equivalent.
A continuation of Intermediate Spanish Composition and Conversation I. Class, three hours; lab, one hour. (Offered in the Spring.)
Second Year Level

SPA 30 Commercial and Technical Spanish / 2 sem. hrs.

☐ 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 employe. 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. (Offered in the Fall.)
First or Second Year Level

SPA 30 Español Comercial / 2 sem. hrs.

Se enseña el español especializado del negocio para obtener aptitudes necesarias de secretarias bilingües o trabajadoras (trabajadores) de oficina. El énfasis es sobre términos de negocio y el idioma español como se emplea en el sudoeste de los Estados Unidos y México. Se practicará el dictado y la transcripción en ambos idiomas. (Se ofrece en el otoño.)

SPA 38 Lectura Bilingue, Español y Inglés / 3 sem. hrs.

☐ Requisito: Alguna habilidad para leer en ambos idomas.
Los métodos y técnica del laboritorio se usan para mejorar la lectura en español y en inglés. Pima College ofrece tres unidades en lectura ofreciendo además de una unidad transferible en español. Habrá lecturas con el texto idéntico en ambos idiomas, lecturas totalmente en español o inglés y estudios para desarrollar ambos vocabularios. (Se ofrece los dos semestres.) (Corequisito es Reading 52.)

SPA 40 Independent Study / 1 to 4 sem. hrs.

☐ Prerequisite: Consent of instructor.
Students pursue an independent course of study under the supervision of an instructor.

SPA 49 Cultura Chicana / 3 sem. hrs.

Este curso incluye los siguientes temas Chicanos: proceso histórico; el fenómeno social; creación literaria. (Se ofrece en la primavera.)

SPA 50 Conversational Spanish I / 4 sem. hrs.

Practice in speaking Spanish, emphasizing current usage and ease in expressing ideas. (Offered both semesters.)

SPA 55 Conversational Spanish II / 4 sem. hrs.

☐ Prerequisite: SPA 1 or 50 or knowledge of Spanish.
A continuation of SPA 50 with study on a more advanced level. (Offered both semesters.)

SPA 60 Technical Spanish for Public Service Employes / 3 sem. hrs.

An acquisition of basic language skills in Spanish, enabling public service employes to functionally communicate with Spanish speaking people in the discharge of their official duties. (Offered upon special request.)

SPA 101 Intensive Spanish for Native Speakers I / 4 sem. hrs.

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. (Offered both semesters.)
Upper Level

SPA 101 Español Intensivo Para Estudiantes de Habla Hispana I / 4 sem. hrs.

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 escriber. 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 (Se ofrece los dos semestres.)

SPA 102 Intensive Spanish for Native Speakers II / 4 sem. hrs.

This is a continuation of Intensive Spanish for Native Speakers 1. (Offered both semesters.)
Upper Level

SPA 102 Español Intensivo Para Estudiantes de Habla Hispana II / 4 sem. hrs.

En Español 102 se continúa el curso 101 del primer semestre con mayor participación en la literatura y en la gramatica. (Se ofrece los dos semestres.)

SPA 120 Novel of the Mexican Revolution / 2 sem. hrs.

☐ Prerequisite: A firm reading knowledge in Spanish.
Students analyze, from a literary perspective, representative novels of the Mexican Revolution. They also gain insights into contemporary Mexican and Mexican-American life as influenced by the Mexican Revolution of 1910. (Offered in the Fall.)
Upper Level

SPA 120 Novela de la Revolución Mexicana / 3 sem. hrs.

En la Novela de la Revolución Mexicana se lee a los autores más importantes de la Revolución. Paralelamente se muestra el panorama historico de la Revolución. Se estudiaran los motivos y hechos más sobresalientes de la época revolucionaria. (Se ofrece en el otoño.)

SPEECH

SPE 2 Introduction to Oral Communication / 3 sem. hrs.
An introduction to oral communication theory with emphasis on developing personal and cultural oral communicative skills. (Offered both semesters.)

SPE 5 Voice and Diction / 2 sem. hrs.
The study and practice of articulation, pronunciation and effective voice production. (Offered in the Fall.)
First or Second Year Level

SPE 10 Public Speaking / 3 sem. hrs.
An introduction to public speaking with emphasis on effective composition and delivery to different audiences with a varied cultural, political and economic orientation. (Offered both semesters.)
First Year Level

SPE 15 Voice and Articulation for the Stage / 2 sem. hrs.
Voice production is studied with emphasis on the practice of standard American and southern British dialects.
First or Second Year Level

SPE 20 Business and Professional Communication / 3 sem. hrs.
Study of oral communication problems found in business and organizations, with emphasis on business media and special applications such as interviewing, group discussion and reporting.
First Year Level

SPE 24 Beginning Forensics / 1 sem. hr.
Basic techniques of debate and experience in debating current issues. (Offered in the Fall.)
First Year Level

SPE 25 Forensics / 1 sem. hr.
The debate of current issues with emphasis on preparation for intercollegiate debate. May be repeated once for a maximum of 2 credit hours. (Offered in the Spring.)
First or Second Year Level

SPE 30 Small Group Discussion / 3 sem. hrs.
An introduction to the theory and practice of small group communications. (Offered in the Fall.)
First or Second Year Level

SPE 36 Oral Interpretation of Literature / 3 sem. hrs.
Classroom and public readings to different groups providing practice in understanding and evaluating poems, plays, stories and essays. Selections will emphasize cultural variety and dramatic possibilities. (Offered in the Spring.)
First or Second Year Level

SPE 49 Independent Studies / 1 to 4 sem. hrs.
Students pursue independent study under guidance of an instructor. (Offered both semesters.)

SWAHILI

SWA 50-51 Elementary Swahili / 4-4 sem. hrs.
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.
First Year Level

TOOL AND MACHINE TECHNOLOGY

MAC 51 Introduction to Numerical Control / 2 sem. hrs.
☐ Prerequisite: High School algebra or equivalent.
The student is introduced to numerical control and its application to the control of machines, processes and manufacturing operations. Occupational opportunities in the field are reviewed. (Same as Computer Science 51.)
(Offered in the Fall.)
First Year Level

MAC 52 Machine Shop for Technicians I / 4 sem. hrs.
Covers preliminary machine shop, introduction to machine tools, their range of application and capacity. (Offered both semesters.)
First Year Level

MAC 62 Machine Shop for Technicians II / 4 sem. hrs.
☐ Prerequisite: MAC 51, MTH 80 or equivalent.
General shop practice including a thorough training in machine tool setup, operation and cutting tool techniques. (Offered both semesters.)
First Year Level

MAC 64 Numerical Controlled Machines I / 3 sem. hrs.
☐ Prerequisite: MAC 51, 52.
The course includes basic numerical control hand programming, steps for the execution of a numerical control job and system components. (Offered in the Spring.) (Same as Computer Science 64.)
First Year Level

MAC 72 Manufacturing Processes I / 3 sem. hrs.
☐ Prerequisite: MAC 62.
Provides a background knowledge about various manufacturing materials and fundamental types of manufacturing methods. Automation is introduced to acquaint the student with modern practice of numerical control. (Offered in the Fall.)
Second Year Level

MAC 73 Jig and Fixtures Designing I / 4 sem. hrs.
☐ Prerequisite: MAC 62, MTH 81 or consent of instructor.
The design and application of tools, jigs and fixtures for basic metal working machine tools. (Offered in the Fall.)
Second Year Level

MAC 74 Quality Control I / 1 sem. hr.
☐ Prerequisite: Consent of instructor.
Students get a practical working knowledge of quality control methods and an opportunity to become familiar with various types of machine tools, tooling, measuring and inspection procedures. (Offered in the Fall.)
Second Year Level.

MAC 77 Numerical Controlled Machines II / 3 sem. hrs.
☐ Prerequisite: MAC 62, 64.
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 Computer Science 77.)
Second Year Level

MAC 82 Manufacturing Processes II / 3 sem. hrs.
☐ Prerequisite: MAC 72.
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. (Offered in the Spring.)
Second Year Level

MAC 83 Jig and Fixture Designing II / 4 sem. hrs.
☐ Prerequisite: MAC 73.
Course enables the technician to lay out design of machine parts, working with government standards and the preparation of drawings for numerically controlled machines. (Offered in the Spring.)
Second Year Level

MAC 84 Quality Control II / 3 sem. hrs.
☐ Prerequisite: MAC 74.
Course offers the technician detailed instruction in inspection and quality control methods used by modern industry. Capabilities of numerical control drafting machines used for inspection are studied in depth. (Offered in the Spring.)
Second Year Level

MAC 90 Properties of Materials / 2 sem. hrs.
A study of industrial and construction materials, their uses, properties, machining and fabrication methods, strengths, durability and testing methods. One hour lecture with three hours laboratory. (Offered in the Fall.)
First Year Level

MAC 91 Industrial Processes / 2 sem. hrs.
Modern processing techniques are pre-studied with practical demonstrations. Course includes machining, hot metal casting, welding (gas and arc), sheet metal cutting, bending and fabrication. One hour lecture with three hours laboratory. (Offered in the Spring.)
First Year Level

MAC 199 Cooperative Tool & Machine Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory tool and machine occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

MAC 299 Cooperative Tool & Machine Training / 3 sem. hrs.
A supervised cooperative work program for students in a tool and machine occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

WELDING

WLD 51-52 Arc Welding / 4-4 sem. hrs.
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 51 offered in the Fall, WLD 52 in the Spring.)

WLD 55 Combination Welding / 3 sem. hrs.
Basic techniques in arc welding, oxy-acetylene welding and bronze brazing, theory and practice in soft and silver brazing. (Offered both semesters.)

WLD 56-57 Oxy-Acetylene Welding / 4-4 sem. hrs.
Students learn set-up and operation of oxy-acetylene welding equipment; how to weld flat, horizontal, vertical and overhead on standard alloys of steel; and to braze and solder non-ferrous and ferrous metals and their alloys. (WLD 56 offered in the Fall, WLD 57 in the Spring.)

WLD 81 Blueprint Reading / 3 sem. hrs.
The student, after successfully completing the course, can interpret blueprints as applied to the welding trade, and is familiar with welding symbols and their significance. (Offered both semesters.)

WLD 199 Cooperative Welding Training / 3 sem. hrs.
A supervised cooperative work program for students in an exploratory welding occupation for an average of 15 hours per week. Course may be repeated.
First Year Level

WLD 299 Cooperative Welding Training / 3 sem. hrs.
A supervised cooperative work program for students in a welding occupation for a minimum of 15 hours per week. Course may be repeated.
Second Year Level

board of governors & faculty

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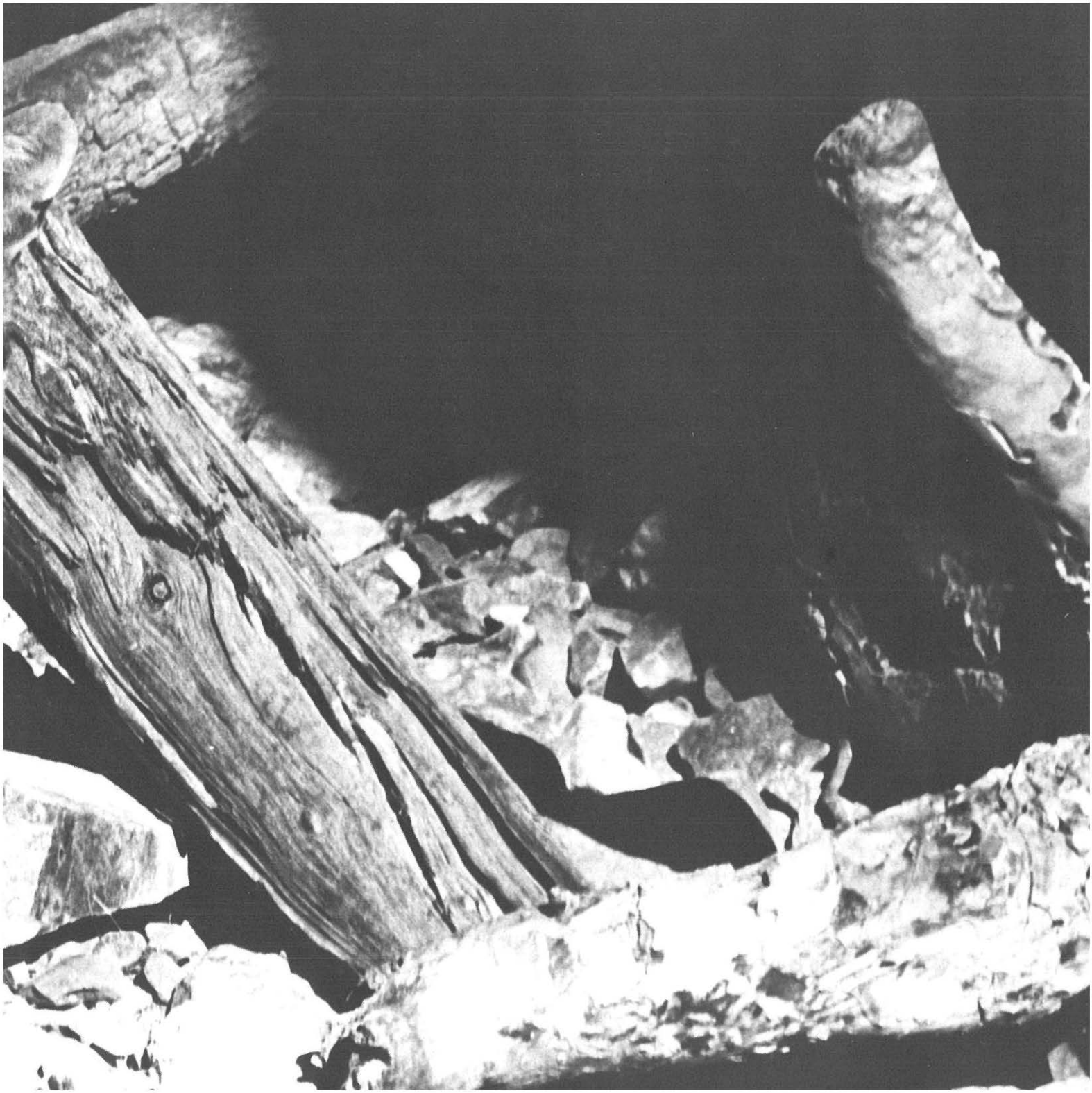

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